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CHANGE - BUILDERS guidelines

for teachers Peer-mentoring system for **ESD**

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FOREWORD

The guidelines are designed to provide support and to upgrade teachers knowledge and skills in peer-mentoring system for education for sustainable development with focus on WebQuest as ICT technique. That is complete and user-friendly tool for teachers in order to lead them to project, plan, implement and evaluate peer-mentoring system for their own professional development.

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PEERMENT was three years Erasmus + project (2017-1-MT01-KA201-026976) coordinated by the University of Malta through its Centre for Environmental Education and Research (CEER). The project was conceptualised via two main considerations:

- 1. Teachers' training is a crucial tool for school innovation and improvement. Mentoring and Peer-Mentoring are among the most effective ways of staff training but they are rarely used in European systems of Formal Education. Annually, many teachers leave courses enthusiastic to put into practice initiatives that encourage SD, yet upon returning to their classroom, their passion is often challenged by day-to-day work realities. Avenues that rekindle their desire become crucial and research indicates continual engagement to be effective.
- 2. ESD is becoming increasingly important, especially for new generations who are set to face dramatic and new global challenges. Unfortunately, national policies do not currently foresee adequate "accompanying measures" at the level of teachers' training. Teachers are required to have new and unprecedented competences: to lead pupils toward values of peace, solidarity and democracy, and simultaneously allow them to understand complex phenomena using knowledge from different subjects. Currently, none of the

existing national systems of teachers' training in the EU appear able to support teachers in this challenge.

The project aimed to lay out, test and disseminate a new model of Mentoring and Peer-Mentoring for ESD. That was done through a process of Action/Research involving around 20 Education Specialists as teacher's trainers and senior mentors, and about 50 teachers as mentors through purposefully set up Local Testing Groups (LTG).

The first desired impact was to spread and improve the use of Mentoring and Peer Mentoring approach and ESD in a combined way. The second was a wider use of Mentoring, and Peer-Mentoring in initial and in-service training, for disciplinary, multi-disciplinary and inter-disciplinary subjects in cooperation with project partners:

- 1. Centre for Environmental Education and Research University of Malta
- 2. Solski Center Nova Gorica (Slovenia)
- 3. Comité National de Solidarité Laïque (France)
- 4. Consorzio degli Istituti Professionali (Italy)
- 5. Udruga za rad s mladima Breza (Croatia)
- 6. ProgettoMondo Mlal Onlus (Italy)

ACRONYMS

CEER - Centre for Environmental Education and Research University of Malta

ESD – Education for Sustainable Development

GAP - The Global Action Programme

ICT - Information and communications technology

LTG – Local Testing Groups

PEERMENT – peer to peer methodology

SD - Sustainable Development

SDG – Sustainable Development Goals

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INTRODUCTION

It is said that a good teacher is like a candle – it consumes itself to light the way for others. Perhaps more than ever we need light to see clearly where we need to go next.

The challenges ahead of us are immense. At the heart of the 17 Sustainable Development Goals (SDG) is an urgent call for action by all countries, recognising that "ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests (https://sustainabledevelopment.un.org/sdgs)." The challenges ahead are also urgent. O'Sullivan (2002) argues that all learning needs to reflect the urgency of the problems we are facing, what he calls "a turning point in the very history of the earth itself (p.2)", adding that such a realization is the bottom line of every educational endeavour.

Different learners position themselves differently when faced with the enormity of the double challenge. Some opt for a lifestyle that is coherent with their own values, seeking as much as possible to reflect in their behaviours the values they espouse. Other might position themselves as passionate about what they do and about expressing their creative side. Still others position themselves as change makers. How teachers position themselves in front of such a challenge?

Every day, people who are in education hear stories about teachers who go out of their way, in most cases more than any minimum requirement, to light the way for others - their students and others in the learning community. Sometimes risking burnout. Sometimes drowning in paperwork. Yet always eager to provide a quality education. This is increasingly understood to be an education that recognises the challenges we face, not least as expressed through the SDGs, where the teacher positions itself as an agent of change, who opens up new conversations that will steer us towards more sustainability, and contribute positively towards eradicating poverty and preserving the environment.

PEERMENT understands that teachers can better reach this challenge through participating in communities of practice - where they mentor each other, sometimes supported by education specialists, who can contribute with their expertise in Education for Sustainable Development (ESD).

Peer-mentoring unfortunately has not been a central theme in the continuous professional development of teachers. PEERMENT seeks to fill in such a gap. The project offers this new tool of Peer Mentoring for ESD that will help create the methodology and support structure for teachers who identify themselves as change makers to be more confident and effective in their work.

PEER MENTORING AS A PART OF EDUCATION SYSTEM

Mentoring and Peer Mentoring are increasingly being acknowledged as crucial tools for teachers and school leaders.

PEERMENT is aimed at the development of the Mentoring and Peer Mentoring approach for teachers' training and aims to strengthen the profile of the teaching profession within the remit of ESD. As a matter of fact, "Mentoring is a form of long term tailored development, with a primary focus on developing capability and potential, which brings benefits both to the individual and to the organization" (University of Sheffield, 2009).

"Mentoring is just-in-time help, insight into issues, and the sharing of expertise, values, skills, and perspectives. Mentors function as a catalyst—an agent that provokes a reaction that might

not otherwise have taken place or speeds up a reaction that might have taken place in the future (Educause, n.d.)."

The Agenda is usually set by the mentored person, with the mentor providing support and guidance to help develop the mentee professionally (University of Sheffield, 2009).

This project proposal privileged a Peer Mentoring Approach, which essentially combined a group style in which the expert(s) passed on knowledge to a group where necessary, with the Circle style, in which co-learners shared knowledge. This combines the best of a top-down and bottom-up approaches, which tallies with the requirements of an Education for Sustainable Development approach.

One European model of interest is based on a constructivist view of learning, the idea of shared expertise and the model of integrative pedagogy, where teachers are trusted, and their professional autonomy respected (Kirsi, T., 2014). In fact: "Peer Mentoring aims to enhance supportive relationships between two people, sharing knowledge and experience and providing an opportunity to learn from different perspectives (My-Peer, 2020)".

The PEERMENT educational model is inspired by the Communities of Practice Theory by Etienne Wenger.

In order to allow the Communities of Practice to promote innovation within ESD, develop social competences, train newcomers, facilitate and spread knowledge within a group, the innovative element of PEERMENT was introduced. In this way, PEERMENT piloted Communities of Practice among teachers working on ESD, while catalysing the formation of such a practice on a more long-term basis.

Communities of Practice create a space for two or more people to learn from their interaction. By gathering people connected by common interest in a field, a passion or an issue, they embed social learning processes activated through the collaboration over a relevant period of time. Participation and learning are based on the availability, intentional or not, to share ideas, dilemmas and strategies, with the aim to explore innovative actions or solutions (Lave & Wenger, 1991, Wenger, 1998).

Inspired by Wenger's definition stating that communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly, PEERMENT Project's partners decided to pilot a new model for Peer Mentoring on ESD.



EDUCATION FOR SUSTAINABLE DEVELOPMENT

The Global Action Programme (GAP) on ESD, which ran from 2015 to 2019, explicitly identified five priority areas, two of which were the transformation of learning environments and the capacity building of educators and trainers. This required that:

"...as powerful agents of change in the educational response to sustainable development, educators and trainers must first acquire the necessary knowledge, skills, values, motivation and commitment to introduce ESD into teaching and institutions, make education relevant and responsive to today's global challenges and help society in general transition to sustainability (UNESCO, n.d.)."

This guide is a contribution towards the capacity building of teachers, in view of eventually transforming schools, so as they mirror a microcosm of a sustainable society we can co-create and envision.

Following up on GAP, the Futures of Education (UNESCO, 2019) is a global initiative to reimagine how knowledge and learning can shape the future of humanity and the planet. It aims to catalyse "a global debate on how knowledge, education and learning need to be reimagined in a world of increasing complexity, uncertainty, and precarity" and to "spark conversations on how knowledge and learning can shape the future of humanity and the planet." Within such a framework, the tools and techniques developed through the PEERMENT project are aimed at creating new spaces for new conversations among teachers, that are so necessary in today's "world of increasing complexity, uncertainty, and precarity".

Education for sustainable development makes it possible to look at today's complex world and take into account existing interactions between the environment, society, economy and culture. Nowadays, sustainable development has a strong holistic dimension which allows one to work on global social issues as a whole. However, its history is not linear. It stands at the crossroads of education, environment and development issues.

Let's briefly go back to its history before defining the concept that is gathering us today.

In the 1960s, several countries, particularly European ones, implemented programs to urge children to get involved in the protection of their natural habitat through eco-citizenship. The 1972 Stockholm Conference was a major milestone as a healthy environment became a right and required Earth's citizens to observe obligations. The issue of education for a healthy environment was mentioned for the first time in the concluding remarks. The 1977 Tbilisi Intergovernmental Conference organised by UNESCO was the first international conference on education for a healthy environment. It mobilised the world's politicians at the highest level and stated that "education concerning the environment had to adopt a holistic perspective taking into account ecological, socio-cultural and other aspects of each question" (UNESCO, 1977). The question of broadening the narrow concept of environment was raised.

In the 1980s, 'environmentalists' (environmental associations) and 'developmentalists' (NGOs focusing on international solidarity, associations working on popular education) concurred with the concept of human development. Human was back at the center of socio-economic and international development concerns and the human dimension was incorporated in the environment ('environmentalist' went beyond the 'naturalist' approach while 'developmentalists' went beyond the 'charitable' approach) until globalisation in the 90s.

The shift from EE (environment education) to ESD (education for a sustainable development) was enacted in the 1987 Brundtland Report (named after the President of the United Nations' World Commission on environment and development) and during the 1992 Rio Conference more commonly called The Earth summit. This report (Our common future) used the term 'sustainable development' for the first time and gave its definition: "answering today's needs without undermining future generations' capacity to answer their own needs."

Sustainable development means to reach a development often said to rest on three pillars:



Economically viable (meeting the needs of a generation)



Socially fair (solidarity between societies)



Ecologically repeatable



*Some add culture as a fourth pillar



Sustainable development is often said to be based on "three pillars'

- Economically viable (meeting the needs of the current generation)
- Socially acceptable (solidarity between societies); Environmentally sound;
- · Some add a fourth pillar, which is culture.

This concept requires to consider three transversal perspectives:

- · Spatial and temporal scales
- Scientific analysis
- Citizenship

This concept leads to taking into account three cross-cutting perspectives:



The space and time dimension



Scientific analysis



Citizenship

Thus, education for a sustainable development is enlarged and encompasses environmental, economic, social and even intercultural questions that are interdependent. It broadens the notion of environmental education and targets other types of education. Participation and democracy are levers for SD, hence for this education. Findings and causes or learning are important but finding solutions, using more participatory and emancipatory types of education, are paramount.

Therefore, education for sustainable development is defined by its goal: providing individuals with behaviour, skills and knowledge that will empower them to take informed decisions for themselves and others, today and in the future, and to turn these decisions into action.

The UN Decade of ESD (2005-2014) sought to mobilise world educational resources to contribute to building a more viable future. UNESCO runs it globally by implementing an operational strategy for all modalities of learning and training.

"ESD empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity. It is about lifelong learning and is an integral part of quality education. ESD is holistic and transformational education which addresses learning content and outcomes, pedagogy and the learning environment. It achieves its purpose by transforming society (UNESCO, 2005). "

What about ESD in Europe?

The Strategy adopted in Vilnius on March 18, 2005, lays out this decade for Europe. European states are asked to adopt national plans of action for ESD through the Ministries of Education and Environment.

Since the 1992 Maastricht Treaty, education has been a top priority for the European Union and since 2001, sustainable development has been the third pillar of Lisbon's strategy. Europe seems to be a fertile ground for ESD. Many countries have enacted the Vilnius strategy with national plans for ESD or within the framework of 'global education'.

In 2016, 90% of member states claimed they had introduced ESD in their national education guidelines but discrepancies remain on what this concept encompasses (most often, it is over-represented from an environmental point of view) and on its structural integration in education systems such as the importance of ESD in school curricula or teachers' training. The resources invested are not up to the ambitions. Beyond the formal system, it is also scarce in the other learning modalities. It needs to be reinforced in 'lifelong learning' and in training processes. Paradoxically enough, the EU strategy *Education and Training 2020* has focused on the economic aspect of SD and on "the efficiency, the employability, the productive skills" of education.

Europe finds it difficult to change/detach its vision of education as a means to acquire working skills and as a transmission of theoretical knowledge about sustainable development. With the 2030 universal Agenda (see below) Europe has turned out to rely too much on the United Nations or on the international agenda to define a real strategy and a strong political support for ESD as a Union.

Goals for sustainable development: has the paradigm for ESD changed?

In 2015, the UN General Assembly adopted the 17 goals for sustainable development while the Paris agreement on climate change was signed. The combination of development agendas and that of Earth summits resulted in the 2030 Agenda: it has set a clear and universal roadmap until 2030 to reach both inclusive and supportive sustainable development. It is universal, it concerns all countries, all being defined as "sustainable developing countries".

Therefore, education plays a catalytic role by providing knowledge and skills to reach the 16 other goals and to comply with the 2030 Agenda. Indeed, there can be no long-lasting effects nor awareness of necessary changes to reach a "zero-poverty, zero-carbon, zero-exclusion" world without educating, informing and making empowered citizens aware. The concept of education for sustainable development has been revised with the SDGs. For the first time educating 'world citizens' has become a top priority. Sustainable development is part and parcel of the numerous educational concepts that broaden the vision of education for change and for a common and sustainable future such as human rights, culture and peace.



GOAL 1: No Poverty

GOAL 2: Zero Hunger

GOAL 3: Good Health and Well-being

GOAL 4: Quality Education

GOAL 5: Gender Equality

GOAL 6: Clean Water and Sanitation

GOAL 7: Affordable and Clean Energy

GOAL 8: Decent Work and Economic Growth

GOAL 9: Industry, Innovation and Infrastructure

GOAL 10: Reduced Inequality

GOAL 11: Sustainable Cities and Communities

GOAL 12: Responsible Consumption and Production

GOAL 13: Climate Action

GOAL 14: Life Below Water

GOAL 15: Life on Land

GOAL 16: Peace, Justice, and Strong Institutions

GOAL 17: Partnerships to achieve the Goal

Sustainable Development Goal 4.7

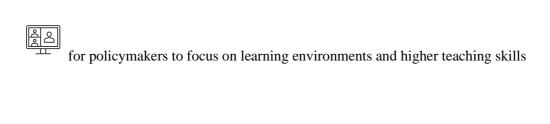
By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development. ESD fosters activism for global solidarity by raising individuals' awareness of common issues such as migrations and responsible consumption.

The UN and UNESCO have recently intensified their action program. The UNESCO 40th General Conference (late November 2019) adopted the new world framework on education for sustainable development (ESD for 2030) for the period 2020-2030. This framework was also submitted at the 74th session of the UN General Assembly: ESD is « an integral part of the Sustainable Development Goal concerning quality education and is an essential catalyst for all other sustainable goals.

Even more recently, students' strikes for the climate across the world showed how important it is:

to educate both young and grown up students so that they may become autonomous and engaged

citizens eager to act locally



PEER MENTORING PROCESS - PREPARATION

Step 1: Trainees group constitution

The early process stages have seen the Education Specialists' meetings aiming to identify the best ways to set up a team of teachers committed to the Peer-Mentoring approach.

After consulting lots of eminent and authoritative sources regarding the topic, discussing them and sharing our own opinions and experiences, we outlined the necessary features to create an effective working team:

Willingness to change and adapt

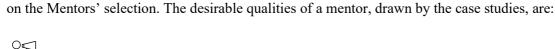
Interest in learning new teaching approaches and methodologies

Reflection on the teachers' role towards learners

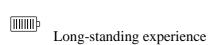
Readiness to mediate on self-reference and/or self-esteem

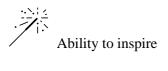
Accountability

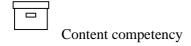
We also considered that attendance shall be on voluntary basis. An extra caution is to be placed



Good communication, organisation and social skills







PEERMENT working teams may be formed any teachers. Some experienced examples are:

Teachers to teachers of the same study discipline

Teachers to teachers of the same class (multi-disciplinary approach)

New recruits (teacher to teacher)

The number of attendants - in each group - may reach a maximum number of 12 (considering the multi-disciplinary approach).

The working environment, which is to be organised for an effective PEERMENT process, is essential. It should be pleasant and welcoming, sometimes even informal, to allow any participant to express their ideas without feeling judged, analysed or criticised.

As previously mentioned, special care has to be put in the mentors and mentees' selection and in the planning of the activities, as well as in the place where the first shared activities will take place. Peer mentoring suggests a two-way, reciprocal learning activity. It is mutually beneficial for both the mentor and the mentee as it involves the sharing of knowledge, competences and experience between both parties.

Peer-to-peer requires all participants to be willing to listen to everyone's experiences and to any contribution they may provide. Hence, encouraging a preliminary introduction of the attendants may help to identify the first common skills and lay the foundation for constructive cooperation.

One of the threats to an effective peer-to-peer training seemed to be represented by the generational gap. It has been observed that the nature itself of this approach removed this obstacle from the beginning, thanks to the inclination of sharing content, skills and experiences.

The meeting location is, at first, essential to the team functioning; the environment must be equipped with the necessary working tools (e.g. Wi-Fi connection), as well as with a relax area dedicated to break moments, where participants may forge relationships in an informal way (coffee breaks with some comfort).

Once the team is close-knit by attending several meetings (at least 3) with the above-mentioned features, any obstacle that may occur will easily be solved.

A concrete and real example is related to a recent staff meeting. It highlighted, due to a sudden location change, a consolidated, intimate and well-balanced group – despite the differences - which was able to work effectively - regardless of the available resources and environment - and make time count.

Another example could be the new recruits' training during which mentor and mentee exchange experiences and observe each other's work with students.

Step 2: Peer Mentoring, ESD and methodological tools (WebQuests)

Peer Mentoring is a way to use all the potential existing inside the schools to guarantee the continuous professional improvement of the teaching staff. In other terms, Peer Mentoring is an excellent way to turn schools in 'learning communities'.

Furthermore, Peer Mentoring is definitely a contribution towards the UNESCO Roadmap for Implementing the Global Action Programme on ESD, including both its objectives, namely of reorienting education and learning to contribute to sustainable development, as well as strengthening education and learning (UNESCO).

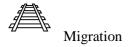
Thus, it is a way to create a 'learning community' at school through peer-to-peer training in order to take on skills related to Sustainable Development Issues.

In accordance with European good practices codes, the following aspects have been considered as essential:

\triangleright	Fluidity in the roles of mentor and mentee
\triangleright	Centrality of networking
\triangleright	Role of "accompaniment"
\triangleright	Added value in international cooperation
\triangleright	Centrality of children empowerment
\triangleright	Necessity for continuous Monitoring and Assessment
\triangleright	Necessity for knowledge and experience sharing in intercultural education
\triangleright	Distinction between information and formation
\triangleright	Environmental sustainability as the basis of social sustainability

The WebQuest methodology was identified as suitable and effective for achieving this end, both for the training purpose and for implementing the Peer Mentoring approach itself.

The WebQuests focuses on global aspects related to the Agenda 2030 and its 17 goals for Sustainable Development, for example:





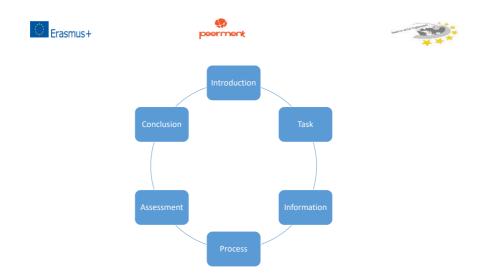


Peer Mentoring training teams among teachers have, therefore, the role to enhance collaboration in the same school, as well as among teachers from different schools through the acquisition of necessary skills to create and use WebQuests.

WebQuests being a prevailing and practical methodology aiming to the encouragement of learning and critical thinking on Sustainable Development. Practically, WebQuests are a web-oriented lesson format to get the notions students need to learn. They can be created by using various softwares, for example simple Word documents or Power Point presentations that may include links to websites, videos or other on-line resources as Quiz apps etc. Their purpose is to stimulate critical thinking and creativity in students, to learn to sort materials and search for the most relevant information, to locate the verified web locations...

Teachers pre-select sources, emphasizing the attention and evaluation on the use of information, rather than on the research itself. WebQuests also increase teamwork competences by respecting the assigned roles and tasks.

WebQuest structure



Introduction

It is used to provide students with basic information (setting, news, assigned roles among the team,...) and the motivations to undertake the activity.

Task

It indicates the assigned tasks to students (divided into groups and the tools that can be used).

Information

This part specifies the sources to be used in the activity, for example the preselected on-line resources.

Process

It describes the path students must follow in carrying out the task.

Assessment

It is the evaluation of the final product and of the teamwork. The final product can also be presented in public events in connection with the local territory.

Conclusion

It represents an activity analysis helping students to identify what they have learnt along the process and, therefore, to acquire further knowledge and competences.

WebQuests were originally devised by Bernie Dodge in 1995 considering:
the complexity of search engines
the students' difficulty in making researches, if the purposes aren't clear
the time spent in making on-line researches
He distinguished, according to the duration, two types of WebQuests:
the short term WebQuest: 2-3 lessons to collect and structure data
the long term WebQuest: of longer duration which includes analysis of the collected data
Useful links: https://eduglocal.com/
https://peerment.eu/

Video: https://peerment.eu/resources/training-for-teachers-on-webquests-focused-on-esd/

PEER MENTORING PROCESS - IMPLEMENTATION

There are many resources on mentoring in general and Peer Mentoring in particular. Furthermore, there are many resources on ESD. What makes PEERMENT unique is in its attempt to combine both together. Thus, in projecting and planning a peer mentoring system for ESD, one needs to work concurrently on both aspects, motivating teachers to position themselves in front of environmental and development (sustainable development, challenges), while learning the processes of peer mentoring.

This in practice required the creation of communities or practice made up of teachers who are passionate about sustainability and who are willing to mentor and support each other. The model adopted as part of the PEERMENT project combined a group style in which the educational expert, well versed in ESD passed on its knowledge to the group where necessary, with the Circle style, in which teachers as co-learners shared knowledge. This combined the best of a top-down and bottom-up approaches, which tallies with the requirements of an Education for Sustainable Development Approach. The central 'ethical' principle adopted was that of putting trust in teachers and their professional autonomy respected, while the central approach chosen was that of peer mentoring, in order to enhance supportive relationships, share knowledge and experience, and provide an opportunity to learn about ESD from different perspectives.

According to Etienne Wenger, *Communities of Practice* are a means through which it is possible to promote innovation, develop social competences, train newcomers, facilitate and spread knowledge within a group.

Communities of Practice create a space to for two or more people to learn from their interaction. By gathering people connected by common interest in a field, a passion, or an issue, they embed social learning processes activated through the collaboration over a relevant period of time. Participation and learning are based on the availability, intentional or not, to share ideas, dilemmas, and strategies, with the aim to explore innovative actions or solutions (Lave, J, 1991; Lave, J. & Wenger, E, 1998).

Inspired by Wenger's definition stating that "Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly", teachers passionate about ESD interacted regularly as part of the PEERMENT process – usually face-to-face, but also using online media, such as social media - to improve and scale up the infusion of ESD across the curriculum.

ESD	Infusing ESD successfully across the curriculum
	 Developing a whole school approach to ESD
	The shared area of interest
	A commitment to learn about ESD and include it in the
	curriculum planning
PEER	Going beyond sharing the job towards engaging in joint
MENTORING	trainings, activities, and discussion
GROUPS	Share their knowledge and information
	Support each other in their personal and social development
	• Engage in working together on the design of lesson plans,
	through various methodologies
	Strengthen relationships and build new relationships,
	including new intergenerational relationships
	Enable personal, professional and group development
	 Regular interactions – face-to-face or online, according to context
	Context is key throughout, and the Peer Mentoring spaces
	provided are also designed to strengthen competencies as
	linked to personal and social development and dealing with
	difficulties arising from implementing ESD which often
	carries a low status in schools and is not always supported by
	the heads of school
DEVELOPMENT	Use of websites, including where feasible the development of
OF NEW	WebQuests dealing with the SDG's and sustainable
METHODOLOGIES	development
	development
	• Filtering reliable news from fake news, pertaining to online
	sources related to sustainable development
	Shared repertoire of didactic and educational tools, lesson
	plans and WebQuests related to sustainable development

The Peer Mentoring for ESD foresees the elaboration of other competencies as linked to delivering ESD as a transversal topic and the role of the teacher in transformative education, and these are described in the following section.

Motivating teachers to position themselves in front of SD issues

It is better to start small in infusing ESD across the curriculum than not start at all. There are different possible entry points to start a PEEMENT for ESD process, and a preliminary needs analysis – whether formal or informal – needs to be conducted.

- Is there already a group of teachers working on ESD and global Citizenship issues, and passionate about ESD?

 Does the school already participate in other project, with which synergy can be found, and
- Does the school already participate in other project, with which synergy can be found, and the PEERMENT for ESD process can further strengthen other already ongoing processes and vice versa?
- Does the school already participate in eco-schools or other similar process, where peermentoring can contribute to the school reaching its goals?
- Does the school already have a green or sustainability policy? Is it in the process of creating one? Do the national governance structures require such a policy?
- Is the administration of the school supportive of such a PEERENT for ESD process?

Valid entry points in the PEERMENT for ESD model are the following:

- 1. Start with a small group of already motivated teachers. This has the advantage that the "passion" is already there. The disadvantage is that this will reach a very selected proportion of the school, though this can grow and spread with time.
- Start with a Continuous Professional Development Training at the school or with teachers through a co-ordinating body across various schools (e.g. subject coordinator or Head of Department).
- 3. Work on creating Local Training Groups of teachers during Continuous Professional Development training or at inspiring the creation of such groups as part of the training. The training can be designed on the "Checklist for the PEERMENT ESD model for teachers' Community of Practice" outlined above.
- 4. Work with the administration of the school in order to get the support of the school and engage in a whole school approach, where the PEERMENT for ESD process is integrated

into the school schedule. This process can take a bit longer than starting with a small group of already motivated teachers but has the advantage of potentially involving much greater numbers of teachers, and eventually students.

Not all teachers are conversant with the principles of ESD. Where the National Curriculum Frameworks of a country include specific reference to ESD, it is important to start with the definitions, aims and learning outcomes there included. Where these are not existent it is best to refer to the definitions used by UNESCO, which emphasise that ESD "empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity, emphasising that it achieves its purpose by transforming society." Specifically, SDG 4.7 aims to ensure that by 2030:

"all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for 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 (UN, n.d.)."

The relevance here is that teachers during the peer mentoring process are invited to focus on how in their teaching they can move beyond the knowledge and awareness of the subject being discussed and focus their lesson planning on empowering learners to investigate solutions to the problem being discussed and ACT upon it. Here teachers who feel less confident can ask for an education specialist (ES) in ESD to be present. The experience of the PEERMENT for ESD process has shown that when the ES is well versed with both the curriculum under discussion (say mathematics or economics) and the related syllabi, learning outcomes and text books, its inputs can be very important to the process.

Consult the management and the heads of the departments

Initiate conversations about the PEERMENT proposal – a vision for innovation, improved SD teaching and learning, competence development for teachers and students and further prepare for shifts in teaching practice. If your school has not already initiated peer mentoring for SD, this could be a good time to start. Try to get support from relevant pedagogical team leaders and gain some important experience. It is best to have a full-hearted support from leadership as they usually provide support for those who may naturally fear change. However, you can also start with small steps – small changes in your work practice can be a good example for others.

Create a PEERMENT vision for your school/subject

Reflect on where to start peer mentoring for SD. At what point can you include WebQuests in the learning process and how? Where and how can you enable teachers to be motivated and responsible for their learning and acquiring new knowledge connected to the SD? Where and how can you connect with other teachers to gain another perspective? It is a challenge at first, but it pays off.

Goal, setting and action planning

Meet teachers and review the potential for collaboration, especially in terms of school calendar and timetabling. You do not need to switch immediately from your existing educational programmes to new ones including SD, but PEERMENT project offers you the possibility to explore and test the concept.

It is advisable to review PEERMENT examples of pilot implementations available on the web and to carry out the preparatory sessions with a view to implementing them in the next school year. The examples will prepare you on what to expect and will give you an idea on how you can include peer mentoring for SD into the learning process.

Outcomes

A clear VISION STATEMENT, a PEERMENT GOAL for your school and a detailed but flexible ACTION PLAN for the future experience. The action list will encompass a calendar, deadlines, regular meetings of small staff teams, etc. The plan will also provide details on how many teams (and how many people in each of them) will be formed within each department/programme.

Remember that the PEERMENT experience can be demanding at first, but at the end a lot of learning can stem from these experiences.

Evidence from surveys of participants in the project shows that this process has significantly enhanced their experiences and that the effects of these benefits have increased throughout the life of the project. Moreover, participation in the project enhanced the leadership, communication, and organizational skills of the peer mentors.

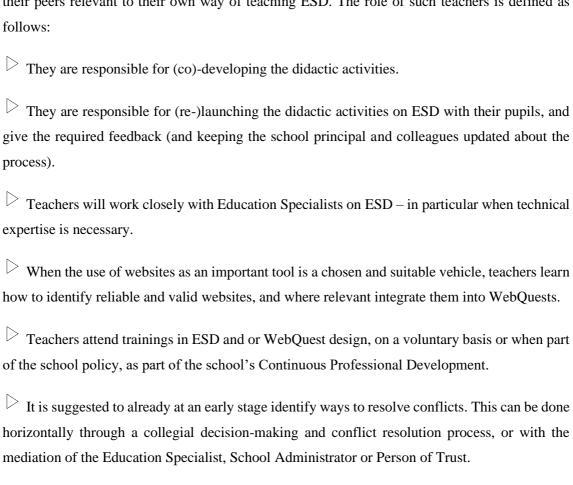
ICT and WebQuests

WebQuests can be useful both to investigate possible solutions as well as to choose one and act upon it. It is a tool that can be used to consciously design the curriculum to go beyond creating understanding and awareness and aim at stimulating a sense of commitment and individual and collective action. Such an approach has the potential to bring about action at individual, community, and governmental levels.

Furthermore, as per SDG 4.7, teachers during the peer-mentoring process are invited to consider cultural diversity issues, and to acknowledge and privilege the contributions of different cultures and indigenous and traditional knowledge in designing participative curricula, as per the context of the classroom. Here again the group work often associated with WebQuests can be an important process of acknowledging diversity and ensuring the inputs of diverse groups.

The process of Peer Mentoring

Participation in the PEERMENT for ESD process is an opportunity for teachers to learn through social participation and to develop his/her identity as part of the process. Social participation and self-development will become part of the motivation push and pull incentives for learning. In the cases where there is already a green or sustainability policy of the school, such participation is often a means of implementing the policy. Depending on country contexts, such a process can also help teachers gain "points" in their career progress. Moreover, members will be keener to learn from each other if they identify with the community and value the skills and knowledge of their peers relevant to their own way of teaching ESD. The role of such teachers is defined as follows:



The frequency of meeting depends on context, but it is suggested that to keep up the spirit of communities of practice, meetings are not less frequent than once a month. However, there are situations where the peer-mentoring process happens among subject teachers (say economics

teachers) from different schools, making face to face meetings extremely infrequent, say once a year as convened by a subject coordinator or head of department. In such cases it is understood that the PEEMENT for ESD process will take place mostly through social media, often through private groups. Here the frequency of meetings is substitute by the vibrancy and participation within the group.

Another useful framework that can guide the peer-mentoring process for ESD is the work around the five key competencies in sustainability, namely:

▶ The Systems Thinking Competence
 ▶ The Futures Thinking or Anticipatory Competence
 ▶ The Values Thinking or Normative Competence
 ▶ The Strategic Thinking Competence
 ▶ The Interpersonal or Collaboration Competence

The table below summarises each competence and can guide teachers engaging in the PEERMENT for ESD process to design their work, privileging what is often considered as a sixth competence, that of meaningfully using and integrating the five key competencies for solving sustainability problems and fostering sustainable development

Systems-thinking competence is the ability to collectively analyze complex systems across different domains (society, environment, economy, etc.) and across different scales (local to global), thereby considering cascading effects, inertia, feedback loops and other systemic features related to sustainability issues and sustainability problem-solving frameworks.

Anticipatory competence is the ability to collectively analyze, evaluate, and craft rich "pictures" of the future related to sustainability issues and sustainability problem-solving frameworks.

Normative competence is the ability to collectively map, specify, apply, reconcile, and negotiate sustainability values, principles, goals, and targets.

Strategic competence is the ability to collectively design and implement interventions, transitions, and transformative governance strategies toward sustainability.

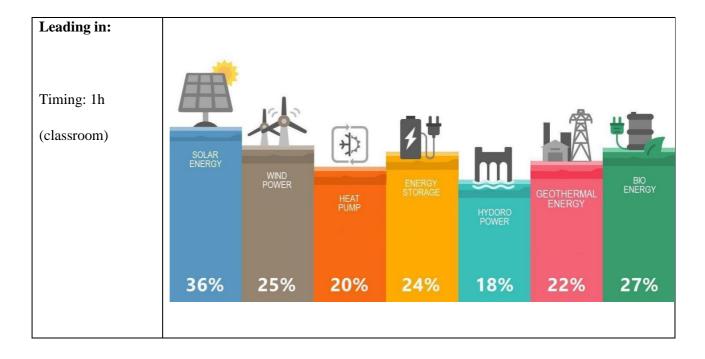
Interpersonal competence is the ability to motivate, enable, and facilitate collaborative and participatory sustainability research and problem solving.

Taken from: https://www.solvingforpattern.org/2012/08/14/kcompetencies-in-sustainability/

ICT'S USE FOR THE PEER MENTORING SYSTEM Examples of good practice – WebQuests

ITALY

Webquest	Green energy
title:	
Involved Subjects:	Citizenship and Constitution, Sociology, Information and communications technology, English, Chemistry, Business
Timing:	4h (classroom)+ 4h (homework) +2h (feedback)



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 $\underline{https://www.youtube.com/watch?v=zypPDeH_fQ4} \ (ITA)$

https://www.youtube.com/watch?v=6UGsRcxaSAI (ENG)

Solar, wind, hydroelectric, biomass, and geothermal power can provide energy without the planet-warming effects of fossil fuels.

In any discussion about climate change, renewable energy usually tops the list of changes the world can implement to stave off the worst effects of rising temperatures. That's because renewable energy sources such as solar and wind don't emit carbon dioxide and other greenhouse gases that contribute to global warming.

Clean energy has far more to recommend it than just being "green." The growing sector creates jobs, makes electric grids more resilient, expands energy access in developing countries, and helps lower energy bills. All of those factors have contributed to a renewable energy renaissance in recent years, with wind and solar setting new records for electricity generation.

For the past 150 years or so, humans have relied heavily on coal, oil, and other fossil fuels to power everything from light bulbs to cars to factories. Fossil fuels are embedded in nearly everything we do, and as a result, the greenhouse gases released from the burning of those fuels have reached historically high levels.

As greenhouse gases trap heat in the atmosphere that would otherwise escape into space, average temperatures on the surface are rising. Global warming is one symptom of climate change, the term scientists now prefer to describe the complex shifts affecting our planet's weather and climate systems. Climate change encompasses not only rising average temperatures but also extreme weather events, shifting wildlife populations and habitats, rising seas, and a range of other impacts.

Of course, renewables—like any source of energy—have their own trade-offs and associated debates. One of them centers on the definition of renewable energy. Strictly speaking, renewable energy is just what you might think: perpetually available, or as the U.S. Energy Information Administration puts it, "virtually inexhaustible." But "renewable" doesn't necessarily mean sustainable, as opponents of corn-based ethanol or large hydropower dams often argue. It also doesn't encompass other low- or zero-emissions resources that have their own advocates, including energy efficiency and nuclear power.

https://www.nationalgeographic.com/environment/energy/reference/renewable-energy/

Assigned Task: Do you know what renewable-energies are? What kind of renewable-energies are used in your country and what is the percent?

What is the amount of electricity consumed by you and by you family?

You've been commissioned by the school to realize a brochure or a spot to inform and sensitize your peers about the importance of choosing renewable-energies.

Identify working groups made of four students. Each group will create either a brochure or a spot to inform about the importance of choosing renewable-energies.

Process:

- 1. Watch with your family the documentary "Before the flood" (National Geographic) and write down your opinions/emotions.
- 2. Download on your mobile the app "Costo energia calcolatrice" and analyse your electricity family spending.
- 3.Read the indicated resources and discover what is the percent of renewable energy used in your country.
- 4. You'll be divided into 4 groups. Each group will create either a brochure or a spot to inform about the importance of choosing renewable-energies.

Assign the following roles among the group based on your abilities: director, interviewer, technical (of editing a movie) and secretary (logbook).

5. Document the backstage of your work.

Resources:

https://www.youtube.com/watch?v=zypPDeH_fQ4 (ITA)

https://www.youtube.com/watch?v=6UGsRcxaSAI (ENG)

https://www.nationalgeographic.com/environment/energy/reference/renewable-energy/

https://ec.europa.eu/energy/en/topics/renewable-energy

https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Renewable_energy_statistics

https://www.gse.it/documenti_site/Documenti%20GSE/Rapporti%20delle%20attivit%C3%A0/SINTESI%20RA%202018.pdf

Tools:

Smarthphone

App "Costo energia calcolatrice"

Videocamera

Premiere Adobe, I Movie

GIMP

Word

https://pixabay.com/it/

Learning Goals:

After completing the WebQuest assignment, you will:

- Know:
 - o the meaning of renewable-energies
 - o the tipology and percent of renewable-energies used in your country
- Be able to read an informative text regarding a specific thematic area
- Be able to read a product label
- Think of the society role in promoting the use of renewable-energies
- Improve your level of participation in school life

Acquired Competences	Acquired Skills = Social	Learnt knowledge and contents
	Competences and Activism	
 Understand the concept of ecological sustainability Understand the concept of renewable-energies Identify behaviours that may 	- Able to identify wrong consumer behaviours related to the environment - Know how to experience active citizenship by engaging in	- Know about the existence of eco-labels and understand them - Know which are the environmental issues caused by incorrect lifestyles
reduce the energy consumption - Become an eco-sustainability influencer - Able to select products in order to become a conscious consumer	activities aimed at promoting correct behaviours - Able to work and collaborate with classmates - Choose providers of green energy	-Know which behaviours lead to a sustainable lifestyle -Distinguish the tipologies of energy: the green one vs the fossil one

SLOVENIA

Webquest title:	Biodiversity
Involved Subjects:	Science, Information and communications technology, English
Timing:	1h (online - classroom)+ 6h (homework) +3h (feedback - online)

Leading in:	Topic presentation (Biodiversity – Invasive species in the Primorska
Timing	region)
	2 hours (classroom – online)

video (youtube)

https://www.youtube.com/watch?v=GK_vRtHJZu4



https://www.google.com/search?q=naravni+svet&safe=active&rlz=1C1GGRV_enSI762SI762&source=lnms&tbm=i sch&sa=X&ved=2ahUKEwiS-

Assigned	Biodiversity – description
Task:	Human point of view
	Endangerment and value
	Biodiversity levels
	Invasive species in the Primorska region – influences
	Photos and video of invasive species in a particular place near Nova
	Gorica (Panovec wood and Korn creek)

Process:

- Students are divided in four groups
- Each group have one topic to discuss
- 1. group: Biodiversity in general
- 2. group: Invasive species in the Primorska region
- 3. group: Invasive species in the Goriška region
- 4. group: layout and language
 - Things to do: the PowerPoint presentation, each group discuss their topic online and choose appropriate image for the presentation
 - One student translated Slovene text into English
 - One student looks after the layout of the presentation

Resources:

https://aquaviva.si/biodiverziteta/kaj-je-to

https://sl.wikipedia.org/wiki/Biotska_raznovrstnost

https://www.arboretum.si/arboretum/biodiverziteta/

http://www.umanotera.org/upload/files/05 _Martina_Bavec.pdf

https://eur-

lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2011:371E:0014:0021:SL:PDF

https://www.gov.si/podrocja/okolje-in-prostor/ohranjanje-narave/

https://www.naturaviva.si/o-

Tools:

Smartphone

Learning Goals:

After completing the WebQuest assignment, you will:

- a) Know:
- the meaning of biodiversity
- the importance of biodiversity
- about biodiversity in Slovenia, particularly in Primorska region
- b) Be able to read an informative text regarding a specific thematic area
- c) Be able to discuss the topic of biodiversity in classroom
- d) Improve your level of participation in school life

Acquired key competence	Social Skills	Learnt knowledge and contents
 Critical thinking Data interpretation Digital and technology-based competences Communication in foreign languages Cooperation and communication in team Able to select products in order to become a conscious consumer 	 Capacity to collaborate with peers. Social awareness related to the topic Capacity to present the topic to the others 	 Informational text and video Knowledge of the renewable energy Know which are the positive and negative things about renewable energy

FRANCE

WebQuest title:	Migration, issues, rights, and prejudices
Involved Subjects:	Migration, Human Rights, History, Law
Objectives of the WebQuest:	 Gaining a better understanding of the history and challenges of migration Questioning one's own representations Understand where prejudice comes from and how to combat it. Better search for information, compare sources Learning through Law
Age:	Secondary school level
Timing:	1h (online - classroom) part: Understand + 1h-2h (work in peers, research online) part: Action! + 1h (feedback - classroom)

WEBQUEST - Migration, issues, rights and prejudices



Migrants, refugees, immigrants... We talk about it a lot! But not always for the good. The media, politicians and citizens very often convey many preconceived ideas on the subject. It is time to set things right, together, by restoring the terms, the rights, the real facts... Everything!

You are about to embark on a webquest, a quest into the web! This quest will be divided into several stages and will allow you to go and look for real facts, information and personal stories to deconstruct preconceived ideas and fakes about migration!

And that's not all! This tool that you will use is in test phase for a European project to raise awareness on sustainable development and solidarity! You will contribute, through your learning and your quest, to improve the tool. So we are counting on you!

Objectives of the WebQuest:

- To better understand the history and the stakes of migrations
- Questioning one's own representations
- Understanding where prejudice comes from and how to combat it
- Searching for information better, comparing sources
- Learning through Law

UNDERSTAND

1) Some definitions

- A migrant is a...

A migrant is a person who leaves his country, crosses a border, to settle and live in a country of which he is not a national.

Migration is a fundamental right. It is guaranteed by the Universal Declaration of Human Rights of 1948, which states that:

- Everyone has the right to liberty of movement and residence within the borders of each state" (article 13-1),
- Everyone has the right to leave any country, including his or her own, and to return to his or her country" (Article 13-2),

In the face of persecution, everyone has the right to seek and enjoy asylum in other countries" (Article 14).

- And a refugee?

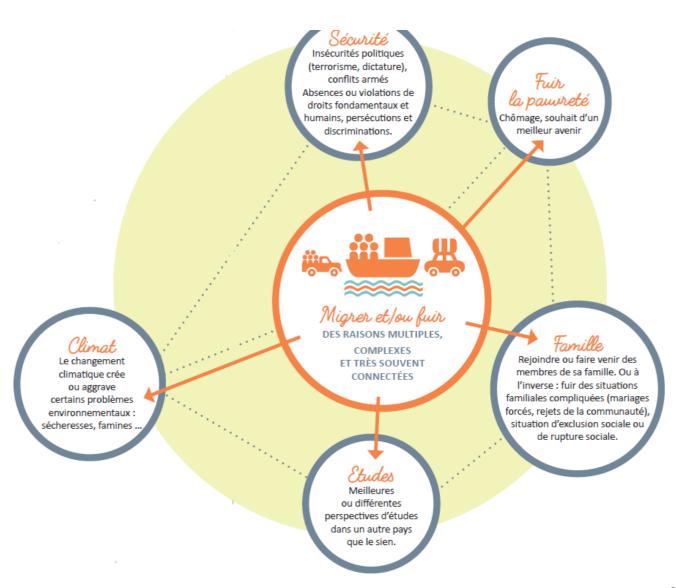
A refugee has been granted refugee status and therefore has had his or her "refugee identity card" (which allows him or her to live "legally" like all other citizens with the same rights and duties), in the name of the "right of asylum".

The right of asylum is the right to international protection. Indeed, as our country can no longer ensure our security, to flee and seek protection and asylum from a country other than our own is an internationally recognised right.

And it is the 1951 Geneva Convention, ratified by all States, which defines refugees: any person can claim asylum if "[he or she] fears persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion".

2) Why do people migrate?

- First look at this computer graphics: can you explain the difference between migrating and fleeing; could you define "voluntary" migration of "non- chosen" migration?



Read the testimony of Mohamed, 17 years old, mainly a minor and a migrant.

https://www.infomigrants.net/fr/story/26760/j-avais-l-impression-de-ne-plus-avoir-de-pays-du-tout-la-longue-errance-africaine-de-mohamet-17-ans

- Traces his entire journey from his country of birth to his current destination.
- Why did he migrate? Do you understand his decision?
- What should his status be? Go back to the definitions at the beginning of this sheet, does the law apply in Mohamed's case? What should it be?

The reasons for migrating can be very diverse. In the case of so-called "chosen migration", work, family, and the desire to live in another country are among the most common reasons. In the case of so-called "non-chosen migration", the reasons are often much more complex, and there is rarely a single cause.

ACTION

1) Better understanding the migration issue: understanding for action

List preconceived ideas that you think are commonly used about migrants. To help you, think about the media's treatment every day, or bring newspapers, titles of articles on the web. Take the time to discuss this in the group before reading the counter-clichés and information that deconstruct these preconceptions.

2) Your turn to raise awareness!

Using the artistic means of your choice, create a tool to fight against preconceived ideas (poem, poster, song, short film) that you can disseminate within your establishment. Photographs/Video: Now it is your turn: if your research has led you to identify photos/videos illustrating this theme and helping to debate, and to fight against clichés: propose them here to enrich this WebQuest!

Suggestions to help you to take into action:

- Compare different sources, different guides to deconstructing clichés (available in the bibliography section).
- Research the history of immigration in France on the website of the Museum of Immigration in France, visit it if possible.
- To debate, communicate among yourselves, use non-violent methods of communication, listen to each other's.
- Look for an artistic practice that interests you, such as poetry, rap, slam, which are very good message carriers. Cinema and graphic art also speak volumes. Find out more about street art and its most famous artists...

Bibliography:

- Survival Guide to Addressing Prejudices about Migration, Ritimo, 2015: https://www.ritimo.org/Guide-de-survie-pour-repondre-aux-prejuges-sur-les-migrations
- A short guide to combat prejudices about migrants, La Cimade, 2011: https://www.lacimade.org/publication/petit-guide-lutter-contre-les-prejuges-sur-les-migrants/
- A short guide to understanding international migration, La Cimade, 2012 2016: https://www.lacimade.org/publication/petits-guides-comprendre-les-migrations-internationales/
- a web doc to better understand migration policies https://uneseuleplanete.org/Crise-migratoire-ou-crise-des-politiques-migratoires
- A documentary by "Datagueule" against the clichés linked to migration in Europe: https://www.youtube.com/watch?v=KiGiupc3VwA

Students self-evaluation:

Skills acquired: in information research, creation of awareness	_	General knowledge (on the history of migration)
messages?	convince my audience, etc.?	of inigration)

MALTA

Quest title:	How Green is the Energy mix of the Maltese islands?
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Age group: Year 9/10

Embedding: Physics lesson

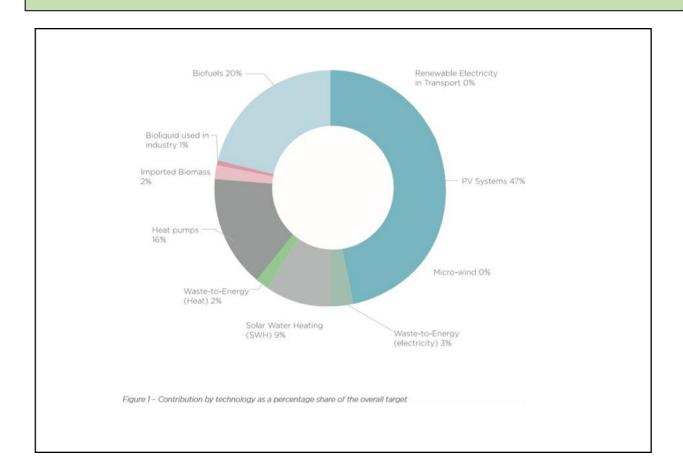
Introduction:



Source: Malta Today

Bound by the EU 2020 targets, Malta must produce 10% of its energy through renewable sources by the year 2020 which will simultaneously contribute to the reduction of the country's carbon footprint. These results are expected to be achieved through a number of renewable energy technologies, photovoltaic installations, solar water heaters, waste-to-energy, heat pumps, biomass imports and biofuels.

RES - Renewable Energy Source



The expected contribution of each type of technology to the final RES target – 10.04%

Source: National Renewable Energy Action Plan

Process:

Your tasks are not intended to investigate in depth each Renewable Energy Source in Malta but to shed some light on the various RESs being currently tapped.

The tasks also sheds some light on the Non-renewable energy sources namely; the Liquefied Natural Gas (LNG) and the Malta-Ragusa interconnector cable. Your job is investigate further how green or less green these are.

For each of the tasks you are to work in teams of up to 4 students.

The most likely sources of information are Enemalta and the Energy and Water Agency however in your research you may come across other valid sources. Nevertheless, always scrutinize the reliability of the source.

Before you start make sure you go through the resources highlighted, browse through the sites/links indicated to visualize and get a general idea of the issues that you are about to investigate.

Tasks:



Source: Sustainable Built Environment Malta

Task 1 - Data Logging

Visit the Xrobb l-Ghagin Nature Park and Sustainability Development Centre l/o M'Xlokk.

Access the real-time logging system from the monitor of the central computer housed in the building. Notice and record any fluctuations in real-time data for wind turbines and photovoltaic cells during different times of the day. Watch closely for a distinct outputs by the two types of wind turbines (vertical axis/horizontal axis) present. The same can be applied for the different photovoltaic cells available on site. Try to discover which weather conditions yield the best energy mix output.

Find the maximum and minimum outputs recorded throughout that week or month. Obtain a meteorological report for the corresponding days of the month. Identify cloudy, sunny and particularly windy days from report. Compare information to check if there is any relation between the weather on certain days and the electricity generated at the park.

Use the data in the logbook or the data logged in the real time computer in main building to draw bar charts of energy generated by each type of wind turbine and /or PV panel in the past week/s or month/s.

Obtain also a 5-day weather forecast and drawing on past patterns try to predict what the energy output from the photovoltaic cells and the wind turbines will be in the next 5 days. Check whether your predictions were correct during the days that follow.

Task 2 - How green is Liquefied Natural Gas (LNG)? Contact the relevant authorities to investigate.

From which countries is it fracked?

Who is being affected and in what ways?

Are there any measures safeguarding /compensating nearby communities?

How many times does the LNG tanker need to be re-fuelled yearly?

Task 3



Source: Enemalta

Task 3- How green is the Malta-Ragusa cable operation? Contact the relevant authorities to investigate.

From which countries is the energy tapped?

What is the energy mix composition used to supply the cable from mainland Europe?

Is it from Renewable Energy Sources or Non-Renewable Energy sources?

Are there any studies conducted to monitor how the electromagnetic field generated is affecting marine life?

How secure is the energy source in view of the rising demand and vis-à-vis the current restrained relationship with neighboring Italy?



Resources:

Websites/links (5 URLs):

1. History of Electricity in Malta

https://vassallohistory.wordpress.com/electricity-in-malta/

2. REACHING MALTA'S EU2020 ENERGY TARGETS WILL REQUIRE 'DISPROPORTIONATE' ${\sf EFFORT}-$

Energy and Water Agency article

https://www.maltachamber.org.mt/en/reaching-malta-s-eu 2020-energy-targets-will-require-disproportion at e-effort-ewa

3. Wind power ditched in favour of solar – Times of Malta article

https://www.timesofmalta.com/articles/view/20161103/local/wind-power-ditched-in-favour-of-solar-as-government-revisits-renewable.629952

4. National Renewable Energy Action Plan 2015-2020

https://govcms.gov.mt/en/Government/Press%20 Releases/Documents/pr162438a.pdf

5. Share of Energy from Renewable Sources of the 28 EU countries - EUROSTAT

http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_ind_335a&lang=en

Videos (Embedded from YouTube, Vimeo, etc):

1. Dismantling of Delimara Power Station

https://www.youtube.com/watch?v=_uubZSlIbP8

2. Conversion from HFO to LNG

https://www.youtube.com/watch?v=l33T3dMIr0g

3. Liquefied Natural Gas

https://www.youtube.com/watch?v=WyZTuzUzR68

4. What is Fracking?

https://www.youtube.com/watch?v=Io8o2nTXhb0

5. Malta-Sicily Interconnector lands in Ragusa

https://www.youtube.com/watch?v=_EsWLwZ57A0

6. Malta-Sicily electricity interconnector

https://www.youtube.com/watch?v=0ZuVsgl_59Y

7. Interconnector cable pulling in Malta

https://www.youtube.com/watch?v=Z_7tyvnhG6M

8. How a Gas Turbine works

https://www.youtube.com/watch?v=zcWkEKNvqCA

Documents:

1. National Renewable Energy Action Plan

Learning Objectives:

Learning Outcomes:	Skills acquired
By the end of this Glocal Quest	
you should be able to:	

- Explain the difference between Renewable and Non Renewable Energy sources.
- Name two RES that are being presently tapped in Malta
- Name two Non-RES that are being used for energy production in Malta
- Explain why the energy mix used in Malta is not only meeting the EU targets but also heloing us meet international targets such as the SDGs.
- Name at least two SDGs that Malta is targeting through the energy mix approach
- Mention one other RES that is not yet part of the present energy mix in Malta but would contribute immensely had it been tapped

- Work and collaborate in a team
- Open for other ideas and respectful of them
- Communicate ideas
- Think globally and act locally
- Take informed decisions
- Question the reliability of source
- Take initiative
- Think critically
- Think outside of the box and realise that there are no onesize fits all solutions

Review:

Questions designed to review progress of the learner:

- 1. In your opinion which of the two non-renewable energy sources investigated (Malta-Ragusa Cable/LNG operation) is the greenest?
- 2. Following your investigations @ the Xrobb l-Ghagin Nature Park and Sustainable Development Centre, what is your opinion on the fact that wind turbine technology was completely ditched from the proposed energy mix to reach the 2020 10% renewable energy target?
- 3. List the pros and cons of wind energy considerations as a valid Renewable Energy Source for the Maltese Islands in view of the looming 2020 targets.
- 4. What is your take on wind energy harnessing for Malta for the post 2020 targets that the EU will definitely set.
- 5. In the setting up of the National Renewable Energy Action Plan 2015-2020, optional renewable energy sources were being discussed. Do some research and name at least one other option that was being considered besides wind energy.
- 6. Each group leader is to take a copy of the SDG chart attached. In separate groups cross out any SDG targets that you think are most obviously not into the picture vis-a'-vis the Energy mix debate. Compare and contrast results, build your arguments and share your opinions.

CROATIA

Webquest title:	Plant a tree, don't be a stump!
Involved Subjects:	biology, environmental protection, geography
Timing:	12 hours in total
Age:	2 nd grades students

INTRODUCTION: Throughout our country, in October 2019, an interesting eco-friendly citizens' initiative "Collective Tree Planting Days" was created, initiated with the idea that everyone can plant a tree and thus contribute to improving their own environment, while contributing to the fight against climate change.

https://danikolektivnesadnje.org/



Photo: https://danikolektivnesadnje.org/

OBJECTIVE: To involve students and teachers of the School of Medicine in collective planting and action with previous preparations and educations, as well as online research on greening, problems with tree planting, the importance of trees, etc.

MAIN TEXT: Encourage citizens, associations, businesses and institutions to plant as many trees as possible in private and public areas on their own or in cooperation with their local self-government units across Croatia, in order to contribute to the greening of their environment, thereby highlighting the importance and many benefits of trees and greenery, especially in urbanized areas.

Forests cover 30 percent of the Earth's surface, and in addition to being a source of food and shelter, forests are the key to combating climate change and preserving biodiversity. It is estimated that 13 million hectares of forest are lost annually. Deforestation and desertification - caused by human activity and climate change - are major challenges for sustainable development and affect the lives and livelihoods of millions of people in the fight against poverty. Efforts have been made to better manage forests and combat desertification. By the end of 2020, it is planned to halt deforestation, restore destroyed forests and significantly increase afforestation globally. Desertification should be combated, soil degraded and land degradation neutralized.

TASK: To make and implement activity plan on the plantation of the trees in Croatia (community level) and to empower citizens to become involved and to become the creators of the future they want.



PROCESS:

1. Through the school advertising book, provide all classes and teachers with information gathered about the action at https://danikolektivnesadnje.org//

about opportunities to get involved in the action, obligations and work assignments. Link to Global Sustainable Development Goals:

http://odraz.hr/media/291518/globalni%20ciljevi%20odrzivog%20razvoja%20do%202030 web.pdf and highlighting Goal 15 (preserving life on earth) through the illustrated comic book: https://drive.google.com/file/d/19Zgp2l-rJfeYJ4jLtOJLxdBx9qiEAbA-/view

https://sustainabledevelopment.un.org/sdg15

Objective 15. To protect, establish and promote the sustainable use of terrestrial ecosystems,

manage forests sustainably, combat desertification, stop soil degradation, and prevent the destruction of biodiversity. The conservation, restoration and sustainable use of inland freshwater should be ensured by the end of 2020 ecosystems and their environment, especially forests, wetlands, mountains and the drained land, in accordance with obligations under international agreements. One of the goals is and undertake urgent and significant activities to reduce the degradation of natural habitats, to halt loss of biodiversity and, by the end of 2020, protect and prevent endangered species extinction.

It is important by the end of 2020 to integrate ecosystem and biodiversity values into national and local planning, development processes and poverty reduction strategies.

In order to achieve this goal, it is necessary to mobilize and significantly increase financial resources from all sources for the conservation and sustainable use of biodiversity and ecosystems, sustainably forest management and afforestation, combating poaching and trade in protected species, with increasing the capacity of local communities.



- 2. Motivate students to participate through online action research https://danikolektivnesadnje.org/
- 3. Talk to students about the importance of trees in improving our quality of life during the class https://danikolektivnesadnje.org/

Trees improve our quality of life in numerous ways

- 4. Choose the way students and teachers get involved in the action and the terms the ability to connect with other organizations / institutions
- 5. Develop in accordance with the instructions of the action plan planting https://danikolektivnesadnje.org/wp-content/uploads/2019/09/odabir_drveca_sadnja.pdf

EQUIPMENT AND TOOLS:

- 1. Computer with internet and projector
- 2. Cell phone, camera or tablet
- 3. Hoes
- 4. Shovels
- 5. Tree seedlings
- 6. Protective gloves

RESOURCES (web links):

- 1. Action colective planting https://danikolektivnesadnje.org/
- 2. Global sustainable development goals http://odraz.hr/media/291518/globalni%20ciljevi%20odrzivog%20razvoja%20do%202030_web.pdf
- 3. 15. goal https://sustainabledevelopment.un.org/sdg15
- 4. Ilustrated comic about sustainable goals https://drive.google.com/file/d/19Zgp2l-rJfeYJ4jLtOJLxdBx9qjEAbA-/view

PHOTOS AND VIDEOS:

https://www.youtube.com/watch?v=TjUjxDAhxdU

https://www.nationalforests.org/get-involved/tree-planting-programs/benefits-of-reforestation

LEARNING OUTCOMES:

ACQUIRED SKILLS	SOCIAL SKILLS AND ACTIVISM NEEDED	KNOWLEDGE AND FACTS ADOPTED
	 Understanding the global goals of sustainable development, especially the 15th goal Understanding of community and collective awareness of acting in the local community Motivation Awareness level 	• Everyone can plant a tree and thus contribute to improving their own environment while contributing to the fight against climate change

REVIEW:

- Reporting for the school website
- photographing events
- Reporting for the action web site https://danikolektivnesadnje.org/

NOTES:

- liaise with other local organizations in action
- Parental involvement of the students if possible

PEER MENTORING – EVALUATION

Peer mentoring is already known as an important component in the strategy to introduce teachers who are in their first year in teaching business. In this particular case we have one experienced mentor helping the beginner with his experience in certain period of time – usually one year.

However in this project the peer mentoring is among equals. Teachers from different disciplines come together in order to share good practices and consult with each other on how to include sustainable development (SD) in the learning and teaching system. We must certainly adapt the evaluation of the system as such to this goal - peer mentoring system for education for sustainable development. Above all, we need to make teachers aware of the importance of integrating sustainable development into teaching, into the school system. Therefore, this will be the first issue that will interest us and we will encourage it and then evaluate it. Another, no less important question, will be whether the peer mentoring model can contribute to this.

We have to establish the criteria. This can be:

the importance of SD in teachers opinion

how often they include it in their lessons

how they share this with others

b do they use peer mentoring as a way to share good practices

The first thing should be to define clear goal to include the SD in our institution and to spread the idea with peer mentoring system. When the goal is defined, we can measure it with:



questionnaires



interviews



reflective questions (self-evaluation)

Define the indicators. According to what is found in the analysis of the results, we adjust the system so that it leads us to achieve the goal. We can always improve the system.

The same questionnaires or interviews can be conducted several times (once, twice or three times a year) and we can compare the results to monitor the progress until the goal is reached.

Peer mentoring works best when teachers are aware and motivated and they thus act on their own initiative and they connect based on their own interests. Therefore, it is important to provide an organizational climate that will allow this. We can make this easier to establish with various incentives and rewards. But they must be collected with reflection. It is difficult to ensure effective peer mentoring from the top down by commanding it. The question is: How to ensure a suitable climate?

Cooperating and co-creating is the foundation of peer mentoring system. The aim of this section is to describe the teams or teachers that network and collaborate hand in hand with other teams or teachers in order to design, develop and establish peer mentoring for SD. By doing so teachers (and consequently students) will gain real-life SD experience and competence as a regular feature of their learning/teaching process.

The establishment of such team networks requires a shift in educational focus and teaching practice. It takes time to plan and integrate all the way from the institutional, managerial and departmental levels to the ground levels (classroom and workshops). However, by introducing experiences such as PEERMENT, it is possible to set up collaborative teacher teams and effective peer mentoring for SD.

Main challenges and obstacles

Challenges of peer mentoring and networking in the curriculum such as PEERMENT proposes are:

Interdisciplinary collaboration: enables to implement challenges resemble as far as possible to real world challenges within a particular field, but is not easy task.

Self-managing teachers teams: boosting teamwork and responsibility within small teaching teams that undertake the development of a particular topic is also necessary; these teams should have the freedom to manage and adjust timetables and learning spaces, and to oversee the groups and substitutions to meet the needs of exchanging good practices at any given time.

Evaluation based on competence development: evaluation is integrated as a key element within the teachers learning process and includes frequent feedback on his/her evolution and progress towards required competence (portfolio, reflective diary, performance evaluation, reflective questions ...).

Adequate learning spaces: the implementation of new methodologies requires specific spaces and equipment. The design of such should be flexible, open, interconnected, and promote, active-collaborative work.

Adequate mentoring: the collaborative learning philosophy requires a shift in traditional work of the teacher - teachers become a supporters or peer mentors of self-directed learning – providing self-evaluation in ongoing reflection on what works and what does not work.

To initiate peer mentoring system for SD, we invite you to review the above five elements. You do not need to have everything perfectly in place the first time you approach the system. For example, you may not have readily available multi-disciplinary learning spaces for teams coming together; or maybe timing and flexibility for interdisciplinary teams may be severely limited. However, you do have inspiring examples of PEERMENT project in different EU countries.

Evaluation by teachers in LTGs

Teachers in general were successful in integrating SD across their teaching. Topics varied from "soft" issues such as recycling, to equality issues such as gaps in wage differentials and gender equality, to issues linked to health, inter-culture, well-being, and healthy lifestyles. The subject taught was often a determining factor, since different subjects offer different entry points and/or different emphases. Furthermore, in the case of primary schools, where teachers tend to teach an array of subjects, the focus of across which topics to infuse ESD, was determined by the teachers themselves, the school leadership, as well as the strengths of the Education Specialists. Surprisingly though we are already one third towards Agenda 2030 and SDGs, some students are still not aware of such global targets, and PEERMENT, through its WebQuests and its trainings sessions, served as an entry point, for students to explore these global and national targets"

Stating that teachers were in general successful in integrating SD across their teaching does not imply that this was a smooth path without obstacles. Beyond the usual time pressures faced by educators, and the need to further their capacity as part of their continuous professional development, some teachers reported resistance from parents, the curriculum itself which is built on a more dominant paradigm, issues with politics, issues of coherence between the discourses and actions of the school, issues linked to motivating students, and a school culture that sometimes does not encourage independent learning.

The exchange of ideas, knowledge and educational methods among teachers was favoured when they could meet in a neutral space where cooperation, trust and confidence were made easier and respect and mutual understanding could be rapidly built by participants and guaranteed by the Education Specialist. In fact, where this condition was accomplished, the relationship between Education Specialist and Local Training Groups grew meeting after meeting and finally, it ended up to be authentic, intimate and enriching for both parts.

Working in small groups of peers has also proved to be a valid method for teachers to engage better and get to know each other's strengths and skills, which has later allowed them to involve each other to complement some lacks of knowledge they may have. This proved to be extremely beneficial for their students.

Therefore, not only it can be stated that teachers' awareness, confidence and capacity of creating tools to explain Sustainable Development topics has increased thanks to the peer-mentoring, but also that, as a consequence, students' curiosity and consciousness toward this fields had greater chances to be stimulated by these synergies. For example, some Maltese teachers at the beginning were more inclined to consider the soft green aspects of the Sustainable Development. However, through the peer mentoring process, they discovered to be more open to other aspects, such as pertaining to social justice or equity. In fact, when later they realised that the examples of the mathematics text book being used in class created a limitation to the infusion of ESD across the curriculum they - through their skills and passion - they reversed the situation by adding new examples that linked better to social justice challenges. This shows how important the role of the expert is, in order to probe, so as to give direction, to the process in accordance with the four pillars of Sustainable Development, namely the economic, social, environmental and cultural. In this respect, we could say that ESD field has been valorised by the Peer mentoring method. Furthermore, for other teachers in Malta, in particular those teaching Economics and Business studies, an explicit reference to the SDGs was found helpful in infusing sustainable development principles across the curriculum. This also helped make learning more relevant, in that through an explicit link with the SDGs, it was possible to see how the peer mentoring process for ESD fits into a bigger perspective of wider national and global targets.



SUCCESS STORIES/ANECDOTES

Several sustainable issues, while laudable, do not necessarily challenge the systems of production and consumption that are at the core of many sustainability challenges. A clean up does not solve the issue of waste production – some even go to the extent of suggesting it might actually encourage carelessness because someone will pick it up anyway. Recycling does not actually encourage learning to live within the carrying capacity of the earth. One can continue over consuming while being attentive to put the thrash in the correct bin. Learning to switch off the lights before leaving the classroom, while laudable, hardly challenges the model of development that is leading to global warming and climate change. Such responses are often referred to as "light green". While such responses ought to be encouraged it is important to reflect on "darker" green issues, if we are to attain the Sustainable Development Goals. How can we minimise our ecological footprint? What about the poor? What about the systems of consumption and production that are creating vulnerability, leaving people behind?

When encouraged to infuse Sustainable Development across the curriculum, teachers often first thing of light green issues. They also tend to focus more on environmental issues rather than development issues. Through the PEERMENT process, teachers had new opportunities to think from a darker green perspective. In particular they started to see social justice issues as an SD issue to be integrated across the curriculum. The role of the educational expert in such a process was also significant, through using probing questions to help the horizontal mentoring process focus in new directions and in the spirit of "the Futures of Education" create new conversations that are so necessary in today's "world of increasing complexity, uncertainty, and precarity".

During the first phase of the project, the students were supposed to make a survey, to observe their mothers while making shopping and analyse the products at home. One of my pupils stressed his mother so much, that one day she came to school in order to talk to me, because she was feeling judged by her son. She told me that everytime she needed to go to the store she was feeling very worried about buying something not organic nor sustainable. She told me that she felt like she had to pass an exam, because her son would have checked every product at home.

In another occasion, students had to calculate their ecological footprint. The WebQuest had been created by our group of teacher in Cervia, to give advice to the pupils, proposing two websites where they could have found the possibility to calculate their footprint. I decided to do it at school for the first time, in order to show everybody how to do, and mainly to explain "what the ecological footprint is".

My pupils and I made the activity with a great interest and fun. At first we entered the WWF's website, then we used their questionnaire and we got the first result.

Later on we did the same activity using a similar application on another web site called Panda Club (this one is much easier than the WWF's one). We found out that my pupils' lifestyle is not sustainable. If all the people of the world ran a kind of lifestyle as my pupils', we would need the resources of 6 planets. What a shock! So the guys went back home and they spent the entire evening calculating the ecological footprint of the other members of their families.

It was good for making people become aware about sustainability.

Another successful story is about the inter-generational work and relationships. There are more than one experience reported from the partners to this respect. For example, the Croatian partner experienced that during meetings the younger participants were adept at using ICT, whereas the older ones were leaders in ideas. In the end, they were able to combine these two competencies and the work itself enriched. Also the Italian partner identified this intergenerational gap as a resource, rather than a problem. They reported that the PEERMENT's key process is to bridge any type of gap, not only the inter-generational one, among the participants. According to them, the inter-generational gap has been overcome by putting everyone at work, making everyone equal and highlighting the pros and cons of each member. In this way, the group, which is focused on working together in completing the assigned task, realized that the inter-generational gap becomes a richness, and this changed the initial prejudices, making the relationship grow into a more authentic one. In addition, "the more the group will work together, the more it will discover that each difference among the members becomes a strength at work; relationships will therefore become stronger and may last even when the project is over."

In the case of Malta, the attempt to set up the Local Teachers' PEERMENT Training Groups took much longer than expected. The process included ensuring that the leadership of the school is behind it and this included various meetings. However, once the leadership of the school owned the process, they could involve the whole school, and coordinate the process. The training was given to the whole school. The school administrators also participated in the process as peers, offering an encouraging aspect and ensuring that they are behind it and backing fully and appreciating the efforts of teachers.

In the case of France, teaching is "a relatively solitary profession", peer mentoring is poorly conceptualised, documented and valued. There are few spaces and times for sharing. However, on the subject of ESD and SDGs, there are many resources and teachers are well aware of them and find the tools.

For Solidarité Laïque- the French partner of the project, peer mentoring was the most valuable aspect of this project and the discovery of the concept motivated the teachers. It has been identified as a lever to decompartmentalise disciplines, especially in secondary education. It was identified as a development axis for the future, based on the capitalisation of experience and a plea for its recognition.

Although the project focused on formal education, Solidarité Laïque (a collective of CSOs involved in formal and non-formal education, popular education, specialised education, etc.) aims to promote the successes of the peer-mentoring model to all educators. This "model" or way of conceiving education goes beyond the framework of ESD and is transposable to other subjects of transformative education: global citizenship, peace...



PEER-MENTORING FOR ESD IN THE TIME OF COVID-19

The PEERMENT project was way into its final year when the Covid-19 pandemic struck all over Europe and the World. As expected, this topical reality brought new fears, new questions, and new opportunities, not least to teachers and educators.

New questions were brought up specifically in conjunction with ESD, not least the need to rethink ESD during confinement and lockdown. Other questions were linked to new needs in relation to peer support and mentoring, including the need to connect and share resources. The necessity to re-imagine a different and better future suddenly became urgent, or perhaps glaringly urgent, since many would argue that the climate change reality and dire poverty were already an urgent call for change.

What seemed not to be put in question is the core focus of the PEERMENT project, in that if anything, its vision of the importance of ESD as a tool to envision a better future and the need to do this in a supporting environment and collaboratively became even more clear.

Combining the challenges faced by some teacher with respect to digital competencies from both a technical point of view and from a pedagogical perspective, the importance of the capacity building of teachers to lead classes remotely and through online tools became more evident in the COVID-19 era. Merging these challenges with the need for more students to invest in "independent learning", tools such as WebQuests could become more diffuse again, and perhaps more necessary. Covid-19 did present a new opportunity for teachers and schools to make use of ICTs for promoting the SDGs and enhancing the quality of education for all.

The post Covid-19 reality might require specialised training in promoting independent learning though online teaching and methodologies such as WebQuests. This is because WebQuests are well positioned to promote critical thinking on values and lifestyles, and systemic and anticipatory thinking to provide solutions to SD challenges.

It is worth highlighting that many teachers did remark about the ghosting of students during online lessons. This means that some students are not being reached. This also presents new challenges, not least with respect to ensuring a quality education for all and the attainment of the SDGs. It is also not to be taken for granted that students do have access to a computer or to internet, or as reported some had one laptop to be shared among siblings, creating logistical issues of access. Furthermore, the mental health of the school community and of our teachers remains a cross-cutting priority among all PEERMENT interventions.

Mental health and issues of access and inclusions could well be new topics to explore in circles, possibly supported by education specialists in the coming years, in particular among schools interested in taking

up the PEERMENT methodology in the future. It is also understood that the peer-mentoring process – which had already gone partly digital due to logistical issues -might need to be mainly based on a shift from in-person to digital, to cater for possible on and off confinement periods.

The bottom line is that the PEERMENT model can provide a good basis for creativity and innovation among communities of practice focusing on infusing ESD across the curriculum. Since the model was piloted in different realities, contexts and countries, it was already designed to be flexible and adaptable, without compromising on the core idea of connecting with each other, exchanging good practice to enhance ESD provision, and mentoring each other to sustain personal and professional development. This adaptability can very well now include dealing with pandemics.

The questions and answers are constantly evolving, and more experimentation is necessary to further understand how peer-mentoring for ESD can further ESD, the attainment of the SDGS and the need to ensure that no one is left behind.

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