



Erasmus+

Atlas
of environmental education



TITLE OF THE PROJECT: “THINK GLOBALLY, ACT LOCALLY! “

2017-1-SK01-KA219-035397



Co-funded by the
Erasmus+ Programme
of the European Union

Content

Introduction – preface	4
About the project	4
Participating schools.....	7
Základná škola, Ul. Sv. Michala 42, Levice, Slovakia	7
Publiczna Szkoła Podstawowa nr 17 im. Przyjaciół Dzieci w Radomiu, Poland.....	9
2 DIMOTIKO SHOLEIO ZOGRAFOU, Athens, Greece.....	10
I. C. L. DA VINCI SAN GIUSTINO, Italy	10
Introduction to environmental education and education for sustainable development.....	13
Teaching methodology for project implementation.....	16
Project activities focused on environmental education and sustainable development	18
1. Email Exchange between partners	18
3. The first official teachers' video conference	19
4. Initial evaluation of the project.....	19
5. Erasmus+ corners.....	20
6. Erasmus+ notice board.....	20
7. Management of the school webpage about the project.....	20
8. Knowing me, knowing you!	22
9. The introduction seminar was led by a specialist in environmental studies	23
10. The project's logo	23
11. Mascot creation.....	24
12. Comparing mind maps.....	25
13. Pupils Ecofootprint	25
14. Create eco-calendar.....	26
15. The First project meeting in Slovakia.....	27
16. Pupils survey "Through local problems to global environmental problems"	28
17. Investigation of causes that could be the cause of environmental migrants	34
18. Exchanging Christmas cards by post – 2017	38
19. The first official pupils' video conference	39
20. Special "Data analyses week"	40
21. The Second project meeting in Greece	42
22. Create of Eco pedagogical place (community garden).....	42
23. Involvement of children.....	43
24. Historical beginning of impact on the environment in local area.....	46
26. Email exchange during the summer holidays	51
27. Studying local areas with environmental degradation	51
28. The Third project meeting in Italy	54
29. Exchanging environmental Christmas cards and gifts by post - 2018.....	55
30. The Fourth project meeting in Poland	55



31. Environmental trips and excursions.....	56
32. Stories, chats with environmental specialists.....	57
33. The second official pupils' video conference	59
34. Search for black dumps in local area	60
35. Using energy in each country	62
36. pH analyses	65
38. Final partners meeting in Slovakia	68
39. The second ecofootprint of pupils.....	69
40. Knowledge test.....	69
41. Evaluation of the project, sociometry	70
42. Summer holidays – finish with the project finish the project	71
Eco-footprint and knowledge test as measurable outputs of project goals	72
Project feedback from our Head teachers	77
Conclusion and summary of the project.....	80
References	82

Editor: PaedDr. Peter Varga, PhD.

The authors of methodologies and project activities: PaedDr. Peter Varga, PhD.,

Mgr. Mariana Bátovská, Mgr. Darina Trnavszká

Translation, language corrections: PaedDr. Peter Varga, PhD., Mgr. Mariana Bátovská,

Mgr. Darina Trnavszká, Ing. Miroslava Kupčiová, Ing. Zuzana Jančová, Mgr. Miriam

Fungáčová,

Final language corrections: Nicholas Wardle GCLCM PGCE TFEL

ISBN: 978-80-970781-3-3



Co-funded by the
Erasmus+ Programme
of the European Union

Introduction – preface

The outcome of the Erasmus + project implemented in 2017-2019 is The Environmental Education Atlas. The Atlas contains methodologies and outputs from all schools and project activities. "Think globally and act locally" is a project that is based on the idea of small local activities that analyse local problems and help global direction and sustainable development. We focus on the "butterfly effect" theory, where small things can not only change attitudes towards environmental issues, but can also affect the whole approach. The project involves four partner schools from - Slovakia, Greece, Poland and Italy.

About the project

The general aim of our project is to change pupils' approach to their environment by speaking openly about environmental issues, global warming, climate change and other serious environmental problems as well as fulfilling the 'Rio-Declaration', Agenda 21 and its main concept: „Think globally, act locally“. Environmental education is a way of reaching our goals by utilising the creativity and culture of our pupils, developing cross-curricular education, employing innovative methods, increasing literacy and encouraging the integration of refugees from an early age through to adulthood using ideas conceived in an international setting. We will also publish our methodology and implementation plan relating to this environmental project, making it available to the school systems of all participants through pupils' science and art papers.

The priority of every human in this world should be focused on environmental issues. Finding the solution to these environmental problems is dependent upon education in early childhood, from preschool education to high school education and is a life-long learning process. Even environmental science is a very young interdisciplinary field. It is a relevant and important issue nowadays and exploring solutions to environmental problems is critical. Through cross-curricular activities we intend to improve pupils' literacy in Maths, Statistics, Geography, Art, Sport, History, Biology, Chemistry, Physics and English. In the process of achieving, the project goals we will use innovative education methods e.g. CLIL, geocaching, direct interaction with nature, ICT, IWB, international cooperation with schools, government



and non-governmental associations too. We believe that sociometry and understanding our ecofootprint will be effective quantitative tools for the validation of our project.

World environmental problems such as global warming, climate change, glacial melting, the rising of sea and ocean levels, the disappearing ozone layer, acid rain, the greenhouse effect, deforestation, desertification, threats to biodiversity, population explosion, as well as other problems caused by man, result in the degradation and devastation of our landscape. This all can lead to the migration of people from threatened or devastated areas. It is not only natural disasters that are the cause of mass migration. A significant factor is also the impact of man's activity on the planet (i.e. wars, refuse disposal, the building of motorways, nuclear power plants etc.) .

The majority of people think that these changes are not their problem. However, every man has an impact on their surroundings and can cause some changes. The question is whether they are positive or negative. Environmental education deals with these problems and tries to find solutions that will enable people to lead lives that are friendlier to the environment. We can prevent migration caused by man by minimising man's negative impact on the planet .

Only carefully and systematically planned environmental education, implemented from an early age, will prepare a young person for life in an increasingly globalised world where focusing on solving environmental problems is necessary. In this way, an implemented environmental education programme can prevent the worsening of these previously mentioned problems and help to change people's mindset, encouraging them to work together on the issue of the sustainability of the Earth. The ancient Indians said: „We do not inherit the Earth from our ancestors, we have borrowed it from our children”. We shouldn't forget about our children and future generations. We should save the Earth..... for them!

Environmental education is a way of presenting different environmental problems, speaking about them, finding solutions and motivating young learners to work towards a solution. By increasing the quality of the educational process, we can minimise future environmental problems. This project is about different interpretations of actual environmental problems, discussions with pupils and learning how to prevent future environmental disasters by exploring ideas developed in different countries across one united Europe. A Europe that is increasingly being tested by growing economic problems, environmental issues and migration. Developing a solution to the problems inherent in the



mass migration of people from non-European countries is crucial. It is vital that we discuss the issue, explore ideas using creativity and critical thinking and, perhaps most important of all, learn from each other in an atmosphere of mutual respect and understanding.

The approach of young people to environmental issues presupposes the use of tools that contribute to effective teaching and learning in an engaging and interesting way. One such tool is innovative learning, employing elements of science and the arts in addition to the use of new technology.

Surveys have shown that, through education, difficult and complex concepts can be understood easily by young people. This raises awareness and inspires action from both the collective and the individual.

In our project we have chosen to focus on environmental migrants. These are people who are forced to leave their homes temporarily or permanently because of environmental factors (natural or man-made), a phenomenon which endangers their existence and has a serious effect on their quality of life. Through our final product, The Atlas, we aim to raise awareness of the issues surrounding this phenomenon and educate the community about related environmental problems.

The causes of environmental migration are attributed to three types of environmental changes:

- catastrophic events that cause population movements
- the gradual degradation of the environment creating the need for migration
- human actions that impact negatively on the population resulting in mass eviction or migration (war, terror, poverty, disease...).

Children have no prejudice and they are readily willing to explore the social consequences of different environmental problems. This will ensure that future citizens of European countries, through education and environmental study, will have a greater appreciation of the environment thereby leading to a deeper understanding of the diverse world in which we live.

Innovative education, using new technology, innovative methods, a cross-curricular approach and an appreciation of national art defines our approach to this crucial issue. Developing confidence and competence in these areas is invaluable and our children will be actively encouraged to embrace new ideas and employ new skills. Our project itself creates a rich foundation for children that enables them to express their ideas and feelings through the



medium of art, particularly in pre-primary and primary schools. Through science, songs, music, visual arts, didactic games, theatrical expression, use of IWB, ICT, a direct connection with nature, international debates and training we aim to increase literacy and awareness. By putting these activities into practice, we hope to instil an appreciation of the importance of life-long learning in our children. In turn, creating a legacy that will last much longer than the duration of the project and impact positively on both *their* future and the future of the planet as a whole.

The transnational character of this project is based on the strong belief that such important issues should be dealt with by different participants who will add their individual point of view and strengthen the validity of its outcome. Pluralism of opinions, empathy between young people from diverse cultures and environmental backgrounds, different social contexts and educational systems, different skills and expertise qualities are intended to merge productively for the benefit of all participants.

Participating schools



Základná škola, Ul. Sv. Michala 42, Levice, Slovakia

- coordinator of the project:

PaedDr. Marta Botková, headmistress, Mgr. Darina Trnavszká, deputy, Erasmus coordinator

PaedDr. Peter Varga, PhD., coordinator of the environmental education, project team member
Mgr. Mariana Bátovská, Ing. Miroslava Kupčiová, Ing. Zuzana Jančová, Mgr. Miriam Fungáčová – English teachers, project team members

Mgr. Martina Šúthová, PaedDr. Jana Valkovičová, Ing. Dana Lalková – participating teachers

Our primary state school is of medium size and located in Levice, in the South-West part of Slovakia. It is attended by 464 pupils between the ages of 6 to 15. We have 9 grades and 41 teachers. The first level includes grades from the first to the fourth. The second level is from the fifth to the ninth grade. The school curriculum focuses on Sports, Foreign Languages, Environmental Education and healthy diet. We have mixed sports classes. The boys are trained by professional trainers and play football in our successful school teams. The girls play volleyball, basketball and football. There are other sports too, such as table tennis,



Co-funded by the
Erasmus+ Programme
of the European Union

boxing, figure skating, dodge ball and swimming. Pupils can develop their talent and skills in several afternoon activities which involve sports, languages, art, dance, chess, hiking, reading etc. We cooperate with local authorities and organisations (Police, Library, the Fire Department, the Town Hall, the Army, psychologists) and we are aiming to add our ethos of cooperation with the wider community and nurturing positive relationships with outside agencies to this project for the benefit of all. We have taken part in one multilateral project ('Comenius') and have built strong and mutually beneficial partnerships with our international counterparts from Finland, Cyprus and Germany. Every year, our school organises school excursions to different countries e.g.. Hungary, Austria, France, Italy and England. Through international cooperation we can learn more about different countries, their culture and life. We are eager to pick up new ideas and initiatives from different school systems and improve our school's future profile.

As a result of participating in the international multilateral project, 'Comenius', we gained valuable knowledge in organisational matters and the ways a school can contact other organisations and work with them for the benefit of the students. We created a blog of the project, a website, led skype conferences with pupils and the teachers from partner schools, printed the calendar, created the logo of the project, wrote a lot of articles about the activities and appeared on local TV. Our teachers took part in eTwinning training courses and then implemented eTwinning projects. Many teachers have taken training in using IWB and using new methods to enrich the educational experience and we would like to expand this approach to the whole school community. Taking part in the project Erasmus plus KA1- a life-long learning programme for teachers, we gained experience in teaching with integrating CLIL methodology into our school. Among the projects implemented in local areas we did geocaching in Levice and focused on discovering nature and cultural sightseeing in the town. The second project, 'Building the Community Garden', demonstrates the use of traditional herbs and plants typical of the pupils' local area. We have also utilised scientific methods whilst researching local water sources, which was academically rewarding.





*Publiczna Szkoła Podstawowa nr 17 im. Przyjaciół Dzieci w Radomiu,
Poland* - project partner

mgr Marek Lipiec, Headmaster of the school, mgr Monika Górecka-Grzywacz – coordinator of the project, mgr Anetta Malmon-Tomczyk, mgr Barbara Kogut, mgr Joanna Operacz, mgr Aneta Stankiewicz – teachers

PSP nr 17 is situated near the centre of the city. It has 651 students (aged 5 -15 years old) and 73 teaching staff. Children come from families across the social spectrum and economic status and have parents with a diverse range of educational backgrounds and levels. For those from families that are experiencing financial hardship, school offers free meals, books, materials, etc. There is also pedagogical assistance given for both children and parents, who need advice, support, and help in solving their problems. There is a wide range of supplementary activities for students to develop their abilities and interests (sports, art, computers, etc.) as well as classes to help students with learning difficulties. They take part in many voluntary activities, visits to the theatre and museums as well as trips. All our students learn English as a foreign language.

PSP No.17 has a rich experience in implementing international projects. The teachers have taken part in creating and coordinating two Comenius Regio projects which had an important impact on partner regions, developing support for students' families. Moreover, the staff have been working together on other European projects: Comenius, ERASMUS+ KA2: ‘cooperation between schools’ as well as two Erasmus+ KA1 projects: ‘Mobility of school staff’ and many eTwinning projects, some of which were awarded prizes. These experiences developed both teachers’ and students' skills in organisation and communication with other nationalities. All teachers participated in many workshops, eg. how to use whiteboards and other ICT tools. Thanks to these activities, the staff and students improved their communication, organisation and English skills.



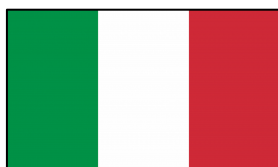


2 DIMOTIKO SHOLEIO ZOGRAFOU, Athens, Greece

- project partner

Georgios Kappis – Headteacher of the school, Konstantinos Christofidis – coordinator of the project, Vasileios Anastasiou, Sophia Mpogiatzi, Kalliopi Mpalasou, Dionisia Plessa – teachers

2 Dimotiko Sholeio Zografou, Athens (2nd Primary School of Zografou) was established in 1952. There are 14 classes, 320 pupils and 22 teachers. We have participated in many national environmental, cultural and health projects. In 2010 we participated in a Comenius project entitled “Getting our Health”. The population of our school is diverse. There are pupils from various countries, so we are sensitive to their integration as well as the integration of children whose parents were forced to move to our area due to unemployment. We approach topics of this kind through various innovative projects, as well as through music, art and drama. Our pupils are made aware of environmental change and the effects that this has on our lives. We organise exhibitions at the end of school year where they display and demonstrate the result of their creativity. Our staff are familiar with projects of this kind and many of them have postgraduate degrees in Environmental Education, Music, Drama, ICT, Art and Special Education.



I. C. L. DA VINCI SAN GIUSTINO, Italy

- project partner

Raffaella Reali – headteacher, Alan Rosi – coordinator of the project
Paola Boncompagni, Cristina Tappini, Roberta Casi, Cristina Cristini, Dafne Gallorini, Emanuela Tarducci, Roberta Meozzi, Cristina Cancellieri, Silvia Cameli, Federica Rossi, Laura Pasqui, Debora Piomboni, Marco Panizzi – teachers

Our Comprehensive School consists of five campuses of which two are primary and three are secondary 1st Degree. They are located in the adjacent towns San Giustino and Citerna (PG). The individual Primary campuses have 86 and 83 pupils respectively, while the three secondary campuses have 86, 165, 220 on roll creating a total of 646 students. The multicultural nature of our school is significant and varied. Foreign nationals make up 11.3% of our school population whilst on the Pistrino campus around 20% of the student body are from other countries. 8.2% of our students have certified disabilities and/or special needs. The



Co-funded by the
Erasmus+ Programme
of the European Union

total staff currently consists of 1 headteacher, 24 + 2 Primary teachers, 4 teachers of determined time, 50 secondary teachers and 16 assistants in the Personnel Unit. The campuses are distributed in the surrounding municipalities, a reality typical of small Italian centres. The school enjoys the benefits and suffers from the inherent problems of belonging to a small community. The people of the community are very interested in the school and a close link has been established between the staff of the School, Local Authorities and the parents of our students to promote an ethos of collaboration in the school network, achieving great results with few resources. However, the fact that our school network is situated in a rural area country typically breeds an introspective and inwardly focussed perception of wider issues. European prospects are often distant from the vision of families and children, as well as teachers and administrators. In one of the primary campuses WE ARE distinguished for having adopted the educational model “scuola senza zaino” "School Without Backpack”, a first in the Umbrian region, attracting the interest of the community and numerous academic institutions. This has been a positive experience and improved the results and performance of our students, further developed teaching standards and has been appreciated by the families of our students. English is taught from primary school (6 years), French is taught from secondary.

The reality is that our campus is becoming increasingly multi-ethnic and, as such, requires cultural openness. To foster positive international relations and hospitality, the mastery of languages acts as a bridge to shortening the distances between diverse groups of people. Commonly, proficiency in a second language is seen as a moral obligation to aspire towards and also as a tool to aid communication in the reality of the 21st century world. But sometimes there is a lack of a concrete action plan. As a Comprehensive School we are working to make this process more active by participating in a training network with other schools in the area and offering numerous and continuous training in foreign languages, aiming to promote life-long learning, encouraging entrepreneurship and developing teachers' skills with a view to making European citizenship more and more practical. We did eTwinning activities, we are encouraging the involvement of more teachers of all types and from all subjects, and we will work in synergy with other European schools also on an application for a KA2. We applied for KA1 in a project on the English language for all the teachers, particularly primary teachers. We have activated, with the help of third parties, summer camps in English as an additional activity to encourage internationalisation for us and



for the community (which responded enthusiastically to the proposal). For years our students from the third classes of secondary schools acquire European certificates of KETs and DELF languages.

We are working towards offering Summer training activities in a foreign language to Italian-speaking and Italian L2 for foreigners during the summer holidays , as well as ensuring, in synergy with all the resources that the local organisations provide, cultural and linguistic mediation interventions on our campuses. Every year we take part in a twinning event with a French town (this year Carros) that, after various activities, goes beyond the boundaries of educational institutions. This culminates in 25 secondary students travelling to our twin town accompanied by their language teachers for a few days. They are the guests of the families of their correspondents, who, in turn, stay with us.



Introduction to environmental education and education for sustainable development

“Now that we have learned to fly the air like birds, swim under water like fish, we lack one thing—to learn to live on earth as human beings “. G. B. Shaw

Environmental education, through developing a better understanding of environmental issues, is now playing an important role in education as a whole due to climate change, global warming, glacial melting, over exploitation of our natural resources, increasing waste and other environmental problems that affect human life.

Many people think that they cannot affect these changes. But every human being has an influence, their ecological footprint, on their surrounding environment. The question is whether it is in a positive or a negative way. However, environmental education highlights these problems. People should lead lives that are more respectful of environmental issues and strive to minimise the human impact on the planet.

Ancient Indians used to say, “We do not inherit the Earth from our Ancestors, we borrow it from our Children.”

We should think of our descendants and next generations and aim to reclaim the Earth for them.

Technical progress should be to our advantage, not a negative phenomenon destroying the environment. We should be aware of the sustainable development of the Earth, which was mentioned by Ms Brundtland in 1987 and later elaborated on at the World Summit in Rio de Janeiro, outlined in the principles of sustainable development in the 21st century - Agenda 21.

The term ‘environmental education’ is composed of two parts. Environmentalism and education. Environmentalism is the science of the environment. This science is being studied comprehensively. It is an interdisciplinary science using knowledge of natural, technical and social sciences (Fryková, 2010). Nevřelová (2008) describes environmentalism as a field that deals with the connections and processes between all kinds of human activity and the environment in which it is realised in and is composed of several directions and focuses.



Education is defined as an activity that aims to acquire and improve the intellectual, moral, political, working, esthetic and physical abilities and characteristics of humans (Pavlík et al., 1985). To understand the term 'Education' we need to appreciate that it covers two parallel processes - upbringing and education, which are inseparable when considering personality development (Duchovičová et al., 2012).

Education is a process in which the pupil acquires knowledge and completes activities, creates knowledge and skills, develops physical and mental abilities and the pupil's interests (Petlák, 2004). In modern pedagogy, the term 'upbringing' is identified as education and refers to it in the best sense of the term. (Kurincová et al., 2008).

In general, we aim to contribute to the pupil's education and enable them to understand, analyse and evaluate the connections between humans and their environment based on a knowledge of the natural laws affecting life on Earth, to know and understand the connections between human population development and the environment in different areas of the world and to understand the connection between local and global issues and their own responsibilities in relation to the environment. Environmental education affects the attitude and behaviour pupils demonstrate towards the environment. (Fryková, 2010).

Vincíková (1998) describes environmental education as the education of an individual whose value system enables him or her to wisely and sensitively act to protect and preserve the biodiversity of life in all its forms, to be capable of compassion for nature and other living creatures and to accept voluntarily, a modest way of life which sits in harmony with the environment.

According to Zsók et al.,(2013) environmental education has a significant impact on pupils' everyday lifestyle and their pattern of behaviour towards consumables.

The immediate environment can be understood from a variety of points of view, and so far, there is no widely accepted single definition.

Among the first and the oldest definitions that characterise the environment is the 1967 definition adopted by UNESCO by Professor S. Wik of Norway, who states that the environment is that part of the world (the universe) with which human beings interact and that the environment adapts (either positively or negatively) to this interaction.



Petro – Bineková (2008) states that environmental education is an educational process aimed at conveying environmental awareness as well as creating a positive relationship to environmental issues from early childhood to adulthood.

The urgency of learning and living in a sustainable way, preserving the world's natural resources and caring for the Earth today, so that future generations can meet their own needs and live on our planet is characterised by Palmer (1998) as environmental education.

A sustainable way of life on Earth is essential for sustainable development, defined by Brundtland in 1987 as a development to meet the needs of present generations without compromising the ability to meet the needs of future generations (Petrovič a kol., 2011).

Rynda (2000) states that sustainable development can be defined as a comprehensive set of strategies that enable economic instruments and technologies to meet people's social needs, while fully respecting environmental limits.

Some authors, such as Gallay (2005) define environmental education as the upbringing of an individual whose value system will enable him or her to wisely and sensitively act to protect and preserve the biodiversity of life in all its forms, who is willing to take responsibility for his or her actions and adopt a voluntarily modest lifestyle in order to limit damage to the environment. Similarly, Frantz - Mayer (2014) characterises environmental education as an education that leads to knowledge and experience thereby creating a change in beliefs, attitudes and behaviour.

On the other hand, Kompolt et al. (2002) report that environmental education is of a cross-cutting nature, synthesising knowledge from natural, technical and social sciences, and defines it as an educational process aimed at conveying environmental knowledge and creating a positive attitude towards environmental issues. Environmental education can be institutionalised in the form of lessons and lectures in schools, or it can be of a popular-educative nature if it is presented in hobby groups, NGOs, media education and the like. The issue of sustainable development is an organic and important part of environmental education. We use both views on environmental education, as well as the upbringing of an individual, but also as a part of the educational process, namely a separate subject of environmental education in a school educational program with the aim of developing a pupil's personality by acquiring the ability to understand, analyse and evaluate relationships between man and his environment, understanding the necessity of protecting the environment around the world.



Teaching methodology for project implementation

In the implementation of project activities, we predominantly used the E - U - R method, which uses a constructivist approach and encourages critical thinking and utilises higher levels of Bloom's taxonomy. We also used some of the elements of project teaching as it is an international project.

The essence of E - U - R is that it respects the mechanisms of natural learning - discovery, and is a universal tool that can be used to build any learning unit whilst facilitating spontaneous learning as much as possible in a controlled learning situation.

What does E-U-R stand for? It is an acronym for: Evocation, Understanding and Reflection.

Evocation is the first phase of the learning process. Its goal is to help pupils recall what they already know about the topic, what they think they know about it, what they understand to be the challenges of completing the project successfully (brainstorming), what they think about the subject, etc. Evocation actually works on a simple principle: when we are interested in something our curiosity is aroused and we want to learn more about it. In addition, when we recall what we already know, we can embed new knowledge in the correct context, making learning more effective and more sustainable. The teacher, thanks to evocation, has a chance to build further on what pupils already know and what they have experienced - "better hit the nail on the head".

Awareness is the second phase of the learning process. In this phase, pupils process new information and place it in to the context of their prior learning (amongst the information they have already recalled and arranged during evocation).

Reflection is the third and most often neglected phase of the learning process. In this phase pupils critically reflect on what and how they learned (look back). It is possible to reflect on the content (what the pupils now know about the topic, what they have confirmed, what they refuted, what questions they still haven't addressed, what else they want to know about the topic, etc.), as well as the processes ('how to' knowledge, what happened during the learning, whether the work was successful, etc.). Only now, during reflection, can the pupils realise what and how they have learned and appreciate what progress they have made. Reflection is the perfect opportunity to focus on those aspects that lie "a bit beyond" the subject matter itself, for example, the development of key competencies, the emotions of



pupils, etc. The purpose of reflection is to inform future learning. The important thing about reflection is that it is carried out by the pupils together with the teacher; it is therefore not a summative evaluation of the pupils' work by the teacher.

E-U-R allows the teacher to plan his or her lessons whilst preserving the most natural learning features that are most effective for pupils. In addition to this model, there are many others, of course, that are equally simple and effective. Like all other models, it shouldn't be followed slavishly to the detriment of the quality of learning, but instead used as a basis for a quality scheme of work that encourages investigation, understanding and critical reflection from both teachers and pupils alike.

Source: https://wiki.rvp.cz/Knihovna/1.Pedagogicky_lexikon/E/E-U-R



Project activities focused on environmental education and sustainable development

The management and implementation of project activities in accordance with the set objectives has been carried out progressively, according to the plan set by the partners. For each activity, a methodology is developed and subsequently the project outputs were reviewed at transnational project meetings.

Planned activities and their implementation:

1. *Email Exchange between partners* - After project approval, partners used e-mail communication to plan and refine their project activities. In addition to e-mail, the coordinators used applications such as Messenger, Viber, What's UP to communicate the application. Applications allow immediate consultation between partners and coordinator and solve problems.
2. *To inform about the project* - all schools involved in the project published information about the project on their website, and several articles appeared in regional newspapers.



Source: Regional newspaper - MY - TÝŽDEŇ NA POHRONÍ, Novinky z Levickej radnice.



3. *The first official teachers' video conference*, developing the project activities – the teachers used the SKYPE © application for a video conference on the implementation of input questionnaires (expected) in the project, planned activities and the first project meeting was held in Levice, Slovakia.



Greece team



Slovak team



Polish team



Italian team

eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c6124ca01.pdf>

4. *Initial evaluation of the project* – project partners filled out an initial questionnaire with open questions focused on project expectations. Teachers from the schools involved in the project expected that most of the knowledge gained would be in the field of environmental education, as well as learning about new cultures and gaining an insight into school systems in other countries and school programs in general.



5. *Erasmus+ corners*. Pupils create a notice board with the info about each partner country.
6. *Erasmus+ notice board* - each school prepares a notice board for disseminating the partnership's activities.

Schools created boards to inform the school population about project activities and project partners. The bulletin boards were one of the tools for disseminating information, publishing results and giving progress updates.



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/be9cffe1.pdf>

7. *Management of the school webpage about the project* - schools created separate subsites on their websites and sites, where they published information about the project, project activities, transnational project meetings and training activities.



Slovakia:



Poland:



Italy:



Greece:



Co-funded by the Erasmus+ Programme of the European Union

Schools' websites:

Základná škola, Ul. Sv. Michala 42, Levice, Slovakia - <https://2zs.edupage.org>

Publiczna Szkola Podstawowa nr 17 im. Przyjaciol Dzieci w Radomiu, Poland - <http://www.psp17.radom.pl/>

2 DIMOTIKO SHOLEIO ZOGRAFOU, Athens, Greece - <http://2dim-zograf.att.sch.gr/autosch/joomla15/>, <https://www.facebook.com/2odimotikozografou/>, <http://erasmusplusproject.weebly.com/>

I. C. L. DA VINCI SAN GIUSTINO, Italy - <http://www.icsangiustino.gov.it/ita/>

eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c51158841.pdf>

8. *Knowing me, knowing you!* – DVDs, PPT and videos-info regarding each partner country - countries made presentations and videos about themselves to get to know each other better. They presented them at the first meeting in Levice. The pupils' task was to prepare interesting presentations about the country, the region, the district and the city where their respective schools are located.

Country	Presentations	Cross-curricular relations
Slovakia	<u>Presentation about school</u> <u>Environmental education at school</u> <u>Levice district</u> <u>Region of Nitra</u> <u>Slovakia I., Slovakia II.</u>	Geography History Regional education Environmental education
Poland	<u>Presentation about school</u>	ICT
Italy	<u>Presentation about school</u>	
Greece	<u>Presentation about school</u>	





Through eTwinning presentations, pupils could learn more about the countries, cities and schools involved in the project.

eTwinning outcome:

<https://twinspace.etwinning.net/60967/pages/page/422981>

9. *The introduction seminar was led by a specialist in environmental studies via ~Skype in all countries simultaneously, giving project terminology definitions and displaying participants' mind maps.*

The Slovak Environmental Education Coordinator prepared an initial seminar for school coordinators during the SKYPE © Conference. Schools received an introduction to environmental education - basic ecological concepts, environmental concepts, entry into the issues of nature and landscape protection, animals and plants, energy and waste.

10. *The project's logo was created by pupils using various techniques. Schools logo competition: schools prepared their own project logos and presented the best logos at the*



first meeting. National project teams coordinated the creation of the logos. Pupils could use any technique - drawing, painting, or computer graphics.

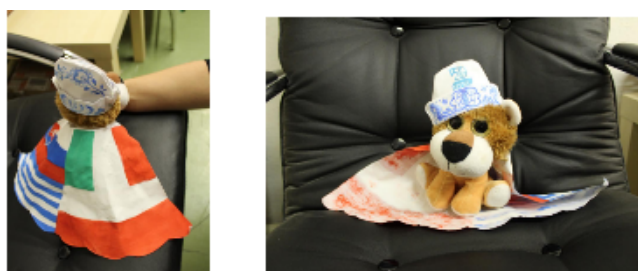


At the first project meeting, the project teams agreed that all logos could be used. In the frame of Etwinning, as well as the logo on the cover of the “Atlas”, we used the logo from Poland.

eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bfac41a1.pdf>

11. *Mascot creation.* It will travel around the world, bring new stories, make friends in each school - the mascot was created by project teams at the first project meeting. It is a lion - relating to the city of Levice. On its head it has a cap from Levice. On its neck it is wearing a scarf from Poland and cloak with flags of all countries. In its hand he is carrying an olive branch as a symbol of Greece and Italy.



The mascot travelled to all countries, where it met new friends and disseminated the results of the project activities that aimed to make the local environment better in the global context of environmental education.

eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c2da06e1.pdf>

12. *Comparing mind maps* by pupils, common and different views on project issue, env changes in all countries, different views on the same problems. After the introductory lectures, the pupils worked out their “mind maps” to acquire their basic knowledge. The emphasis on conceptual maps was based on critical thinking, analysis and the synthesis of individual environmental contexts.



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c0bb8361.pdf>

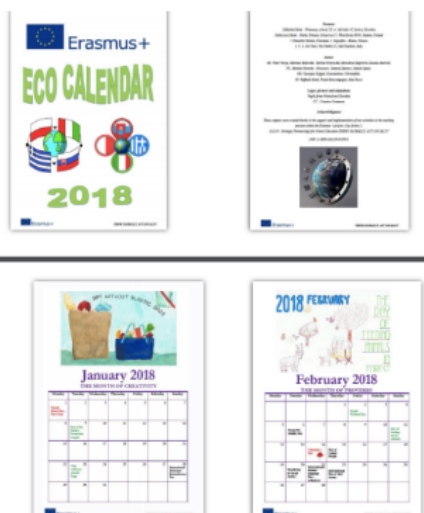
13. *Pupils Ecofootprint* in all countries, sociometry - the ecological footprint is one of the indicators of sustainable development and quantifies the human impact on the

environment. Pupils and teachers assessed their ecological footprint based on a sample of about 100 participants. They used the website of the Slovak Environment Agency, which is also in English. Using a short questionnaire, participants were able to identify their ecological footprint and, at the same time, a number of global hectares. They formulated their results into a table. It was the first measurement of their relationship with the environment before the commencement of activities designed to modify this relationship. Basic information about the ecofootprint is published at the website- <http://ekostopa.sk/your-ecological-footprint>. The Ecofootprint, as a quantifiable measurement, is described and compared in a separate chapter.

eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c1cac521.pdf>

14. *Create eco-calendar* with activities on special environmental days. During the first year the calendar was made by teams from Poland and Slovakia. Pupils from Poland created illustrations and pupils from Slovakia devised a calendar with significant environmental days. Teams agreed at the project meeting to select a special day to focus on and prepare a thematic day based on environmental education. In the second year, the illustrations were created by pupils from Greece and Italian pupils devised the second calendar.



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c4f88a61.pdf>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c5107cc21.pdf>



15. *The First project meeting in Slovakia:* the presentation of each country's outcomes: calendar, mind maps and pupils' ecofootprints. Share DVDs, outcomes. Planting trees (10/2017) Leading: SK



The first project meeting took place at the Elementary School, Ul. sv. Michala 42 in Levice, Slovakia on November 7-12, 2017. School directors and coordinators of all participating countries joined these meetings. They evaluated the completed activities and planned further activities and considered the methodology of their delivery.



We disseminated information relating to the project meeting:

- in the regional newspaper: MY TÝŽDEŇ NA POHRONÍ
- on the Levice town's website <https://www.levice.sk/projekty-zs.phtml?id3=110191>



– on regional television –
<http://player.vimeo.com/video/242555235?title=0&byline=0&portrait=0>.

Participants were warmly welcomed by the Mayor of Levice.

The Department of Ecology and Environmental Sciences, Faculty of Natural Sciences, Constantine the Philosopher University in Nitra gave information about the project activities published on the website - <http://www.kee.fpv.ukf.sk/index.php/en/?start=3>.

Project participants attended a meeting at Tekov Museum, Levice Castle, the Synagogue and Calvary in Levice.

16. Pupils survey "Through local problems to global environmental problems"

Purpose: to highlight the urban and local problems in town. Based on pupil's observation, pupils evaluate these problems, discuss environmental issues during lessons and analyse how to eliminate them in relation to global environmental problems.

Target group: pupils

Methods:

- a. Theoretical introduction to the problem.
- b. Initial thoughts on the problem.
- c. Observations in the field.
- d. Problem identification, description of the problem.
- e. Draft solution.
- f. Presentation of the problem.
- g. Discussion and connection.

Solution:

- a. During environmental education lessons, pupils were gaining familiarity with the theoretical concept of urbanism and the definition of urban and local problems.
- b. The teacher then addressed the problem - to find problems in the country, specifically in the town. The pupils processed them in the form of a short report describing the site of the problems and documenting them with



photographs. They could name a maximum of three problems, at least one of them being related to issues that the pupils experienced on the way to / from the school or in their immediate surroundings.

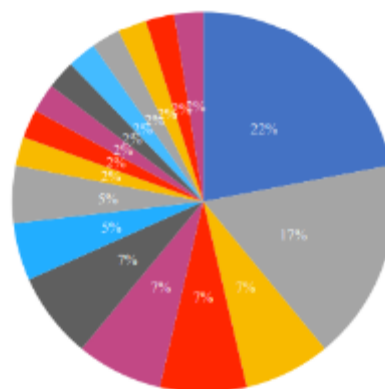
- c. Pupils observed urban problems near their place of residence and processed them in the form of terrestrial and photo-documentation in the afternoon.
- d. After identifying the problems, they described them in a paper-based report, using ICT and photographs.
- e. To the best of their abilities, they solved the problems identified.
- f. At the environmental education lesson, they presented their findings with suggestions for solutions.
- g. The pupils then discussed amongst themselves and in the groups the identified problems and solutions and then proposed solutions for municipal self-government, which were directed by the town representatives, and connected to global environmental problems.

Slovakia:

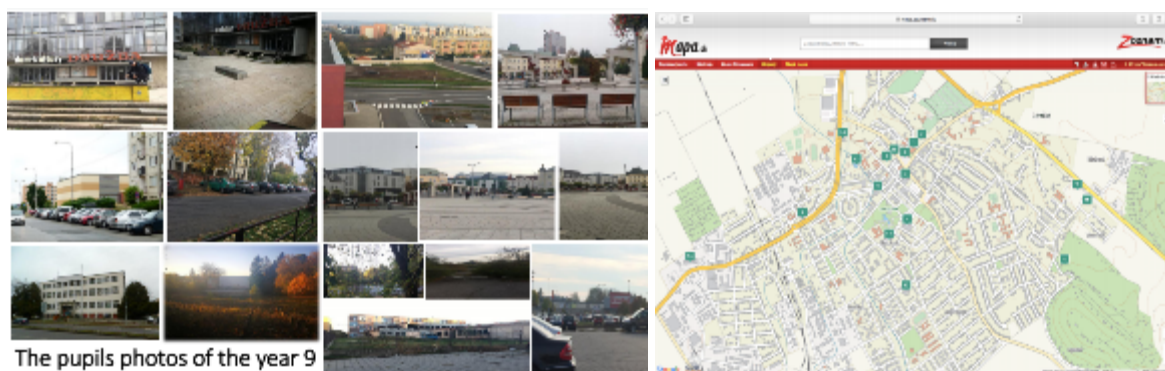
The pupils identified the localities that had been identified as containing urban and local problems in Levice town and its surrounding area. Their results were processed into a table and graph:



Problem identification	Number of pupils who have noticed the problem
Culture Center Družba-the building dilapidates	9 pupils
Parking (town center, housing)	7 pupils
Ditura - architectural problem in the square	3 pupils
Kaufland Shopping Center - inappropriate placed in the town center	3 pupils
Old Hospital - dilapidates in the wider town center	3 pupils
Open-air theatre – dilapidates	3 pupils
The green on the square - the lack of flowers	2 pupils
Walking on the green areas, lawns, lack of green areas care and playgrounds	2 pupils
Mlyn „ Mill“ - unfinished building in the town center	1 pupil
Hotel Astrum - architectural problem in the square	1 pupil
The brickyard – the dilapidating company in the Vinohrady housing estate	1 pupil
Swimming pool – dilapidates in town	1 pupil
Not completed building of nursery school in the Rybníky housing estate – dilapidates	1 pupil
More dumps, waste problem	1 pupil
Bakery - stores	1 pupil
Vinohrady housing estate – missing sports area	1 pupil
Condition of local roads, streets	1 pupil



- Kultúrne centrum Družba - chátra v centre mesta
- Parkovanie (centrum mesta, sídliska)
- Ditura - architektonický problém na námestí
- Nákupné centrum Kaufland - nevhodné umiestnenie do centra mesta
- Stará Nemocnica - chátra v širšom centre mesta
- Amfiteáter - chátra
- Zelen' na námestí - nedostatok kvetov
- Chodenie po zelených plochách, trávnokoch, tráva starostlivosť o zeleň a detské ihriská
- Mlyn - neukončená stavba v centre mesta
- Hotel Astrum - architektonický problém na námestí
- Tehelňa - chátrajúca firma na sídlisku Vinohrady
- Mestská káňarska - chátra v centre mesta
- Nedostavená materská škola na sídlisku Rybníky - chátra
- Čierne sklady, problém s odpadom
- Pôkoreň - sklady, chátra
- Sídlisko Vinohrady - chýbajúca športová zóna
- Stav miestnych káňarskí



Based on a theoretical introduction, the 9th grade pupils identified urban problems specifically within the local urban area of Levice. Together they identified 17 problems. The biggest problem was the cultural centre Družba and the second biggest problem was parking in the town. Other problems were dilapidated buildings, an old hospital, an amphitheatre, an undergraduate school, the town's swimming pool, a brickyard, the lack of greenery, black dumps, architecturally inappropriate buildings in the town centre - shopping centre Ditura, Kaufland, hotel Astrum and an unfinished mill. Besides identification and photo documentation, pupils described the problems and suggested possible solutions to the problems whether they be reconstruction, the complete demolition of buildings or rebuilding new, more useful places using European funds. The pupils had discussions about possible solutions, and they were also considered Levice's town hall suggestions for solutions. All the



problems were highlighted on the map. Based on the discussions, they decided to inform their representatives (the youth parliament and representatives of the pupils of our elementary school) and to open discussion with local authorities and elected representatives of the town about urban and local problems in Levice.

eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c910de9a1.pdf>

Poland:

Air pollution - SMOG: Causes: Exhaust fumes, Coal fired power plants, Industry. Air quality in Mazovia is bad. The maximum level of SMOG in the district is exceeded quite often especially during the wintertime.

Possible solutions to the problem: The easiest and definitely the cheapest way to fight SMOG is planting trees and other flora. There are several species that deal with air pollution quite effectively. Chimney filters installation. Using a good quality heating materials. Encouraging people to use public transport.

Water pollution: Cause: industry and household sewage. Possible solutions to the problem - Sewage plants construction.

Illegal rubbish dumps (in forests, water bodies etc.): Possible solutions to the problem: Encouraging people to reduce rubbish production and careful disposal, frequent events like „Clean up the World”. Locating more rubbish bins, not only in the parks, but also in the forests and leisure areas. Legal regulations – higher penalties.

Deforestation: Possible solutions to the problem: Educational campaigns, encouraging people to plant more trees, bushes etc. Forest planting by appropriate civil services.

Legal regulations adjustment. Renewable energy plants. Easy and cheap access to a household renewable energy source.





eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c8fea7e1.pdf>

Italy:

Tobacco: Industrial crops of tobacco are made in just 3 months needing 16 applications of pesticides and fertilizers: highly toxic substances. Pesticides, such as herbicides, fungicides, repellents are chemicals used in agriculture to prevent crops being destroyed by diseases.

Advantages: no disease and a greater quantity of crop. Disadvantages: contamination of whole ecosystems and biodiversity. All products are highly polluting for ecosystems. In our Valtiberina countryside, in certain months, you may experience a strange smell of soap accompanied by an annoying burning throat. This is caused by the use of anti-doping products of which they say “they stink but do not hurt”. The pesticides that are not contained within the area of the crop to be treated, spread into the surrounding environment causing a phenomenon called “the drifting effect”. The drops of chemical mixture can pollute the water, the soil, the air and affect man as well as surrounding plants and useful insects. The 2009 directive on the sustainable use of pesticides is largely not applied by EU countries as an official report by the European commission identifies, even after 8 years since the approval of the law.





eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c6e02061.pdf>

Greece:

Athens, like all major cities, faces many environmental problems. One of the problems of our city is the lack of greenery and parks. Athens has the smallest green area of all European cities. Just 2 m² per inhabitant. Increasing car traffic has created air pollution. Another major problem is noise pollution. As the traffic problem in all cities is large, noise pollution is steadily increasing. A major problem is also litter and rubbish and cleanliness in general, which affect daily hygiene. In cases of heavy rain during the winter months, there are floods resulting in many problems.



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c7ef6221.pdf>,

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c5d0dea1.pdf>



17. *Investigation of causes that could be the cause of environmental migrants in entering participating countries.* Introduction and explanation of the term "environmental migrants".

AIM: To investigate the causes of environmental migrants entering our country. Introduction and explanation of the term "environmental migrants".

Methodology: Purpose: to highlight the global problem of migration because it is a real issue in EU. Pupils search for information on the internet, TV, in the newspaper etc. They define the term migrant and divide migrants into three groups: economic, social and environmental. They prepare PPT with general information about the topic. Pupils present PPT and lead discussion about the issue focusing on the environmental causes of migration from a local and global perspective.

Target group: pupils

Methods:

1. Theoretical introduction to the problem.
2. Observation in the field of migration.
3. Problem identification, description of the problem in PPT.
4. Presentation of the problem.
5. Discussion and connection.

Solution: PPT

Slovakia:

What is migration?

- A movement when a single person or a group leaves their home and go to another country.
- They often have to go a long distance to get to their final destination.
- Their stay at the destination is temporary or permanent.
- People migrate because their living conditions are bad or because of a job and for new experiences.



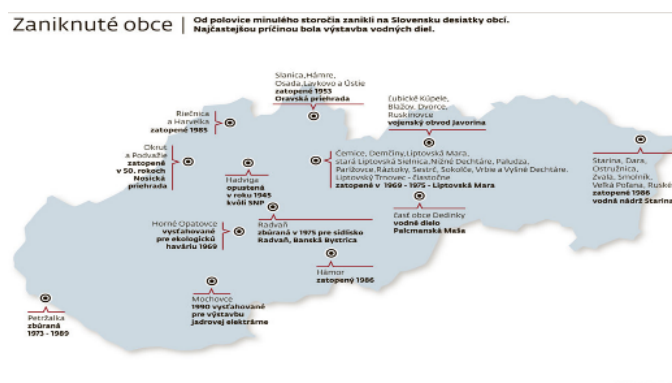


Reasons for migration - Environmental reasons- natural disasters, constructions of power plants and water tanks... Social reasons- war, political disagreements, poor civil rights record...

Economic reasons - not enough finance, poor working conditions... Slovakia is not one of the traditional migrant destination countries. Until recently, the Slovak Republic was almost exclusively a country of origin of migrants, a country from which citizens migrated to foreign countries for various reasons. More significant changes were brought to Slovakia's accession to the European Union. In the period since 2004, illegal migration and asylum have decreased in the Slovak Republic and legal migration has increased four fold.

Reasons for the displacement of villages and environmental migration:

- construction of a water works
- activity of a military force
- construction of a housing estate
- ecological accident
- protection zone of a nuclear power plant



Source: <https://domov.sme.sk/c/20083673/vysidlenie-ludi-utrapi-lobce-ktore-zmizli-z-map.html>

eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c6d267c1.pdf>

Poland:

The Baltic Sea has beaches and seaside areas. Erosion systematically affects whole coasts and more than half of it is affected intensively. In some places half a metre of the land is taken by the sea every year. Actions are taken to protect the shore against the steadily encroaching sea. The Silesia region is an area of vastly degraded natural environments, caused mostly by intensive exploitation and the processing of natural resources (coal), industrial development, transportation and urban development. Air pollution, sanitation and industrial sewage, heavy metals soil pollution and other environmental issues cause an increase in frequency of lung diseases and incidences of cancer. People migrate from this area because of: air and water pollution; soil pollution (farming hardship); health issues.

environmental migrants
people who are forced to leave their home region due to sudden or long-term changes to their local environment



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c5c32201.pdf>

Italy:

Fortunately in Italy, especially in the central part where we live, we do not have many environmental emergencies due to pollution while unfortunately every day our seas are the scene of tragedies that concern migrants, often forced to abandon their lands not only for strictly political or economic problems, but also by the difficulties, often caused by man, of an

environmental nature. Unfortunately, however, environmental problems also occur and have often forced many people to abandon their homes. Too often accidents, such as floods and landslides, occur due to atmospheric events although it is often man that is at fault through not respecting or caring for the environment in which he lives.

The earthquake is a terrible phenomenon that has repeatedly hit Umbria, our region, killing and leaving many people without a home. For example, the earthquakes of 1997 and 2014. The earthquake obviously is not strictly linked to human activity, but it reminds us of the force that nature can have and the respect we must have for it. Citerna was partially destroyed by the earthquake of 1917, 100 years ago and many people had to leave their homes. The children did a research on this topic and participated in a commemorative exhibition.



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c4b3e041.pdf>

Greece:

The exact international definition for environmental migration is not agreed. Environmental migrants are people who are forced to move from one place to another due to environmental changes in their surroundings (IOM 2007).

Reasons for environmental migration - Climate change, rising sea level - By 2050 there will have been about 150.000.000 migrants. The UN estimates 60 % of human movement is caused by environmental issues. Environmental disasters include drought, famine, volcanic eruptions and earthquakes. Man-made catastrophes include the destruction of local resources during and after war, pollution due to natural resource extraction (mining, oil) and agricultural exploitation. Effects of Environmental Migration - Migration causes economic, political,



social and environmental effects and multinational issues such as: open-border policies, security issues, human trafficking/slavery and environmental disasters because of human activities. This impacts on the migrants, on the home country and on the host country.

Solutions - Environmental migration, like all migrations, is a global issue. Migration is a result of climate change, not a threat to security. Address the causes of involuntary migration and create legal solutions to ease migration. Go back to basics, to a historically positive view of migration and immigrants. Dispel stereotypes.



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c3a49e81.pdf>

18. Exchanging Christmas cards by post – 2017





eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c8f0eb41.pdf>

19. *The first official pupils' video conference* - exchanging information regarding to the outcomes of local problems, discussion about environmental migrants:



eTwinning outcome:

<https://2zs.edupage.org/photos/?photo=album&gallery=660#photos:album:660>



Co-funded by the
Erasmus+ Programme
of the European Union

20. Special "Data analyses week" - Math for analyses of meteorological data

AIM: Math for analyses Maths for the analysis of meteorological data. Temperatures in special spring week in all countries – 9:00 and 12:00, from 19. – 23. March 2018,

Purpose:

To highlight the global changing temperature problem (Global warming). Pupils measure temperatures and process them into the tables. They compare data from the special week in 2018 to the special week on the historical horizon.

Target group: pupils

Methods:

1. Theoretical introduction to the problem.
2. Measurement of temperatures during special week.
3. Processing weather and temperature tables.
4. Comparing data of special week in 2018 to special week in historical horizon.
5. Discussion and connection.

Solution: table

Spring measurements

Slovakia:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/cb11eb081.xlsx>

Poland:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c4a62421.docx>

Italy:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/ca10f6ec1.xlsx>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/cc12df241.pdf>

Greece:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c91002d01.xlsx>

Summer and autumn measurements

Slovakia:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bc109d937.pdf>

Poland:



<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/ba106ca77.pdf>

Italy:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/b8b2b987.xlsx>

Greece:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/b7a377c7.xlsx>

Winter measurements

Slovakia:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/b99b8707.xlsx>

Poland:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c8121a777.pdf>

Italy:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c1c49357.pdf>

Greece:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c611e98b7.xlsx>



By comparing measurement data and historical measurements pupils in all countries noticed that the temperature is increasing. Subsequently, the teachers encouraged the pupils to critically discuss global warming and its possible consequences

21. *The Second project meeting in Greece*: presentation of the survey outcomes relating to local and global environmental problems, environmental migrants, results from special "data analyses week". Share DVD's with the outcomes. 05-06/2018. Leading: Greece



Outputs of meeting: <https://twinspace.etwinning.net/60967/pages/page/422982>

22. *Create of Eco pedagogical place (community garden) with local plants and herbs...*
Making a short video of pupils working in the community garden.

AIM: Creation of Eco pedagogical place (community garden) with local plants, trees and herbs. Making a short video of pupils working in the community garden to YouTube.

Purpose: Pupils create Eco pedagogical place – community garden, rock garden, herbs garden with local seeds of plants, herbs, flowers, bushes and trees. They make a short video of this activity (stop motion).

Target group: pupils

Methods:

1. Theoretical introduction to the problem.
2. Choosing the local plants, herbs, flowers, bushes and trees.
3. Team work in the community garden.
4. Make a short video and photos from this activity (stop motion).



5. Discussion and connection.

Solution: photos and video

Slovakia:



Poland:



eTwinning outcome:

https://youtu.be/e_7CmjMoRok,

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c6c4aba1.pdf>

Italy:



Greece:



eTwinning outcome:

<https://youtu.be/TsK1orH0nDk>

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c7d3ed61.pdf>

23. *Involvement of children* - English, Music, Art, ICT in writing tales, short stories, songs, drawing and painting pictures, making posters and PPT on the impact on environment to causes of their movement and to the social, economic and cultural impact

AIM: Involvement of children – English, Music, Art, ICT in writing tales, short stories, songs, drawing and painting pictures, making posters and PPT presentation on



the impact on environment to causes of their movement and to the social, economic and cultural impact. Presentation – Earth Day – 21. – 23. 4. 2018.

Purpose:

Pupils create tales, short stories, posters, songs, draw and paint pictures and make PPT presentation of the impact on environment. They are based on the three parts of sustainable development (SD) – social (poverty, unemployment etc.), economic (industry, agriculture, tourism etc.), cultural (minority, religion, etc.), environmental (waste, motorways etc.)

Target group: pupils

Methods:

1. Theoretical introduction to the problem (SD).
2. Create tales, stories, songs...
3. Individual and team work
4. Exhibition of pupils work in school.
5. Discussion and connection to SD.

Solution: photos and video

Slovakia:

The pupils' art works: drawings, paintings, pictures, posters, stories, comics and poems were displayed on school boards at the main entrance to our building.



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c8e32f21.pdf>



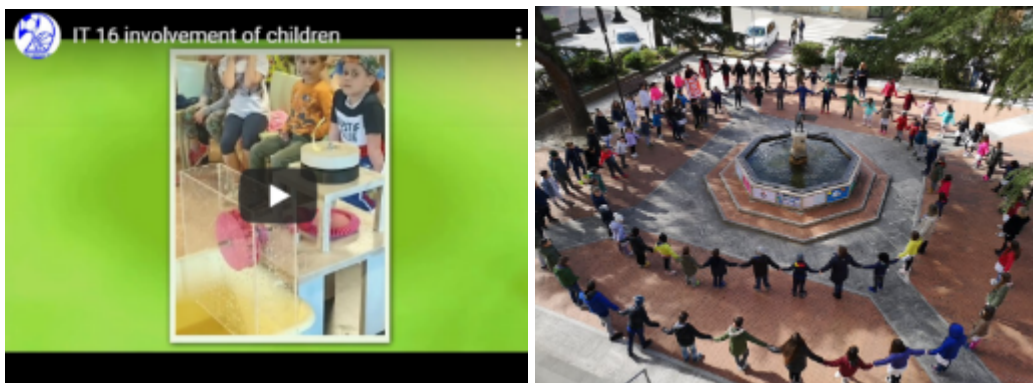
Poland:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c9f270e1.pdf>

Italy:



eTwinning outcome:

<https://youtu.be/QmADfd4JJtM>

Greece:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c3e7e811.pdf>



Co-funded by the
Erasmus+ Programme
of the European Union

24. *Historical beginning of impact on the environment in local area* - History in all partner countries.

AIM: History in all partner countries. Work with old maps and present maps, change of land.

Purpose: Pupils work with old and present maps. They look for changes comparing both maps of local area. They note down all findings of their research.

Target group: pupils

Methods:

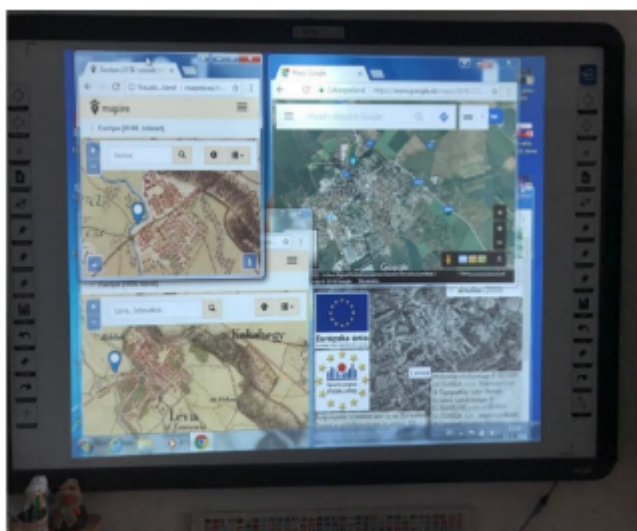
1. Theoretical introduction to the problem.
2. Study of old maps.
3. Study of present maps.
4. Comparing of maps.
5. Outcomes of data comparing.
6. Discussion and connection to change of land.

Solution: PPT

Slovakia:

Based on the theoretical introduction of the country and its exploitation, pupils of the 8th year, observed historical maps of the 18th, 19th, 20th and present (21st century). They identified changes in the country and possible development trends in the defined territory of Levice. They observed that the disappearance of arable land, fields, greenery and urban landscapes is increasing. In discussion they said that this was due to the development of the town, the increasing importance of the town and the increasing number of inhabitants of Levice. In the second part, they analysed the possible development trends of Levice and agreed that arable land, fields and greenery will continue to disappear. There was a conflict regarding whether the town will be connected with the surrounding villages or not. The pupils looked at the historical development of the town, where they studied and outlined the possible scenarios of their town's development.





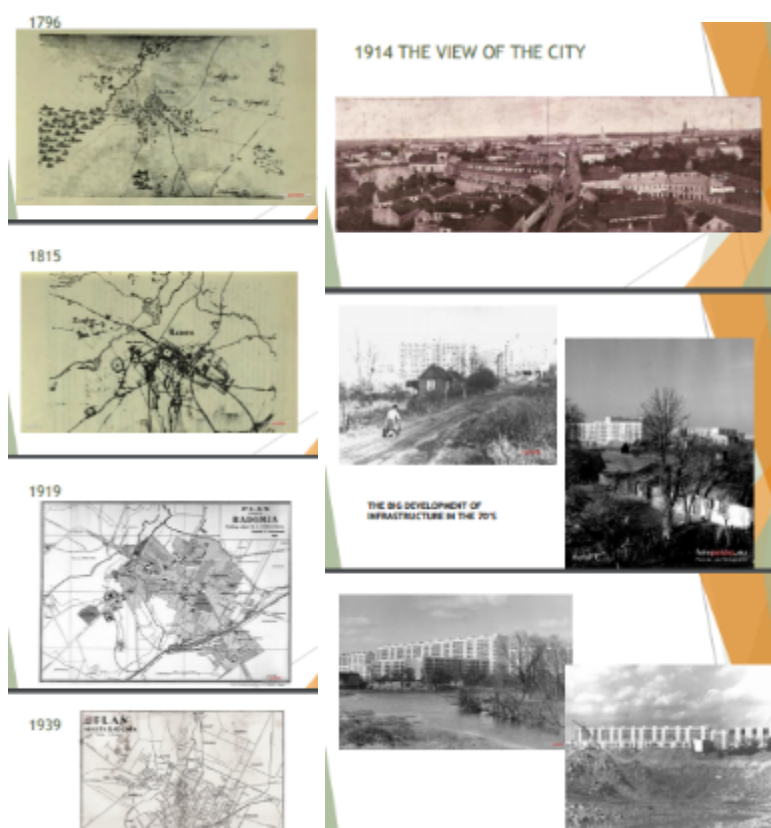
Historical and present maps of the town Levice



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c7124f311.pdf>

Poland:



eTwinning outcome:

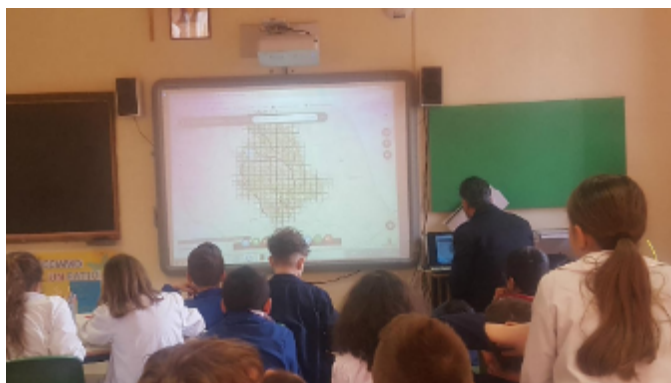
<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c6115b151.pdf>



Co-funded by the
Erasmus+ Programme
of the European Union

Italy:

Studying the environmental impact of urban development in our areas, we asked the town surveyor for help. He told us about the development of our municipality, Citerna and we saw the development and transformation of our country Pistrino. He showed us maps and aerial photos of the last decades that have highlighted the progressive urbanisation of the countryside. we discussed the effects of urbanisation.



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c4f72dd1.pdf>

Greece:

Athens has changed greatly over the last sixty years. In the past, Athens was a more human city, in terms of natural beauty. There were more green areas, fewer cars and construction rates was lower. Three rivers flowed through it, Ilissos, Iridanos and Kifissos. But as cars grew, the need for larger roads was created. So the rivers were altered and now flow underground. Then we considered the present picture, a city with many streets and great construction.



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c51066f91.pdf>

Poland:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c09eaal1.xlsx>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c1adefd1.pdf>

Italy:



eTwinning outcome:

<https://youtu.be/lMePpZX3nCM>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c812678b1.xlsx>



Greece:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bf9d24f1.pdf>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c0ac66b1.pdf>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c1bba871.pdf>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c3da2ff1.xlsx>

26. Email exchange during the summer holidays

Teachers communicated electronically during the project meeting, redistributed tasks and an ongoing project review was in process (ongoing reports).

27. Studying local areas with environmental degradation - Geography. Identifying the knock-on effects at all level. Creation of maps with the help of ICT and documentary studying.

The activity was linked with the activity where the maps were already compiled "*From Local to Global Issues*". Pupils and teachers combined the environmental calendar with this activity and prepared special days to highlight environmental problems and local environmental degradation in their surroundings. Methodology was directed by each school individually.

Slovakia:

Teachers prepared Milk Day to highlight the local problems in agriculture (reduction of livestock production).



The second activity was European mobility and car free week. During this special week pupils used bicycles for transport around the town and in the town of Levice the public transport was free of charge. The third activity was the European Week of Sport, highlighting the consumer lifestyle, reducing the quality of the environment and nature due to high dependence of people on natural resources. Pupils did some sport activities with an emphasis on a healthy lifestyle in harmony with nature, without creating local burdens and environmental degradation.



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bab46437.pdf>

Poland:

Pupils focused on the problem of biodiversity reduction (World animal day) and waste problems (Clean Up the World).



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/b8e846f7.pdf>

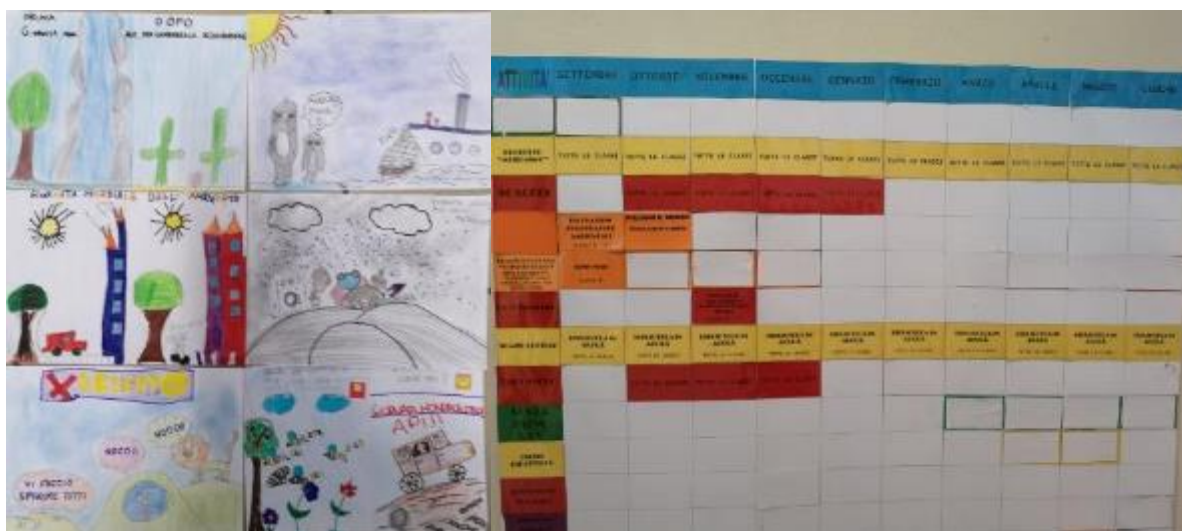
<https://youtu.be/HL59T54Uzyo>

https://youtu.be/Ygli_zQ-mqk

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bcefc087.pdf>

Italy:

Pupils held discussions about waste, biodiversity, sea pollution and so on.



Greece:

Pupils also made posters and discussed animal and plant protection, biodiversity etc.



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bellc00a7.pdf>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bbee3b67.pdf>

28. *The Third project meeting in Italy:* presentation of survey outcomes relating to the historical beginning of the impact on the environment, list of endangered plants and animals, Map presentation about degradation occurring in the local area, short stories, posters, presentations, pictures and short videos from the community garden made by pupils. Share DVD's with the outcomes. 09-10/2018. Leading: Italy





Outputs of meeting: <https://twinspace.etwinning.net/60967/pages/page/586573>

29. *Exchanging environmental Christmas cards and gifts by post - 2018* (recycling materials)

Pupils again exchanged postcards using recycled materials and displayed them at project corners.

eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bde64aa7.pdf>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c1b6d737.pdf>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c511d1317.pdf>

30. *The Fourth project meeting in Poland:* presentation of each countries outcomes of annual project's work - qualitative and quantitative evaluation. Evaluation of calendar with special environmental days, exchanging of photos. Activity C1 in Poland - training in Poland with pupils. 02-03/2018. Leading: Poland.



Outputs of meeting, C activity: <https://twinspace.etwinning.net/60967/pages/page/586574>



According to the approved project, 14 pupils from Slovakia continued in environmental education at a primary school in Radom, Poland.

31. *Environmental trips and excursions* for pupils in each country. Excursions reflection

AIM: Environmental trips of pupils

Purpose: Pupils go on environmental trips to interesting places (parks, gardens, farms, power plants, dumps etc.). They take photos and record short videos.

Target group: pupils

Solution: photos and videos

Slovakia:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/baf911d7.pdf>

Poland:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/b29a7497.pdf>



Italy:



eTwinning outcome:

https://youtu.be/6t0D_320VYw

Greece:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/baecb5c7.pdf>

32. Stories, chats with environmental specialists

AIM: To arrange a discussion with environmental specialist, for example – waste manager, protector of nature, ecologist...

Target group: pupils

Solution: photos and videos, summary of discussion with env specialist



Slovakia:

Discussion with waste specialists



Lecture about air quality



Discussions with beekeepers



Forest Pedagogy



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c011413e7.pdf>

Poland:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bbc7c727.pdf>



Co-funded by the
Erasmus+ Programme
of the European Union

Italy:



eTwinning outcome: <https://youtu.be/XM9oZEYpygE>

Greece:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c612c54d7.pdf>

33. *The second official pupils' video conference* exchanging information: outcomes of excursions and environmental trips, stories, chats with environmental specialists. Pupils from all project countries discussed the outcomes of previous activities and sang the selected song together again.





34. *Search for black dumps in local area.* Using „TrashOut“ application (<https://www.trashout.ngo>). Inform municipality about illegal dumps through the mobile application.

AIM: To have discussions with pupils about waste problems, support separation and recycling of waste, eliminate black dumps in local conditions.

Activity suggestions:

1. Have an introductory lecture on waste, its disposal and handling, also about legislation at national and European level
2. Process of individual types of waste, make e.g. presentations and recycling possibilities . (e.g. Plastics, PET bottles and their use after recycling in the textile industry) etc.
3. Talk about disposal options – dumps, burning of waste, recycling and compost.
4. Visit sewage treatment plant, waste dump, separation line or recycling company to make output about it.
5. Present findings, discuss the topic of waste.
6. Undertake research on school (separation in school) on town, (possibilities of separation in the town where aj live in), in the state.
7. Look for black dumps (for example, take photos of them) in my area.

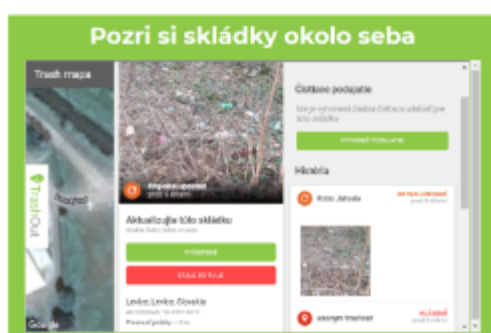


Slovakia:

Recycling waste at our school! Reusing of waste materials



Support projects:
<https://zrs.edupage.org/a/recyklohy>
<https://zrs.edupage.org/a/ekoalarm-2017-2018>



Cleaning our town from waste and black dumps



- We cleaned M. R. Štefánik park in the centre of Levice
- Levice Calvary
- School surrounding

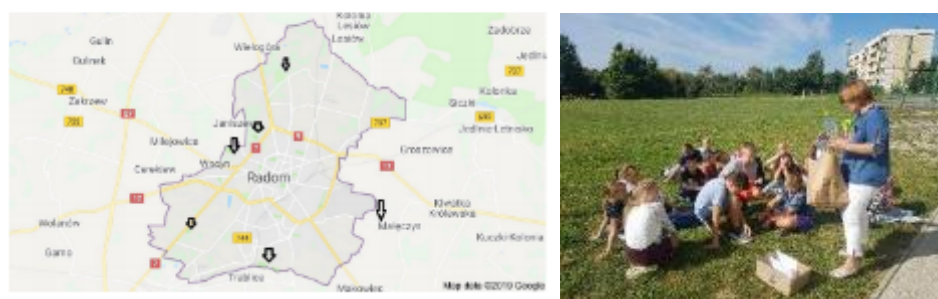
Support projects : Earth Day, Initiative DM together and others .
<https://zrs.edupage.org/a/levice-calvary>
<https://zrs.edupage.org/a/levice-calvary>
<https://zrs.edupage.org/a/levice-calvary>
<https://zrs.edupage.org/a/levice-calvary>
<https://zrs.edupage.org/a/levice-calvary>

eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bee7d3c7.pdf>

Poland:

Map of black dumps



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/b89a01e7.pdf>



Co-funded by the
Erasmus+ Programme
of the European Union

Italy:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c2d3d517.pdf>

Greece:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bfb3c877.pdf>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c41001537.pdf>

<https://youtu.be/UE3GN-J6hUk>

35. *Using energy in each country*, questionnaire: use of energy at home, school and in each country.

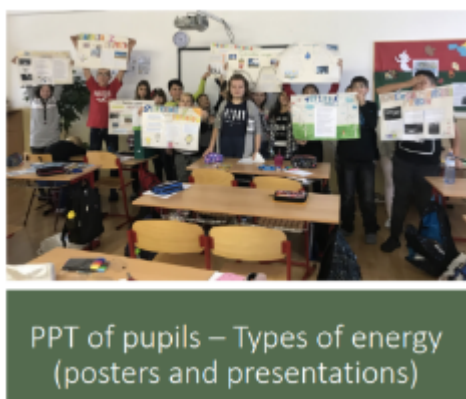
AIM: Discussion with pupils about the types of energy, their usage in participating schools and countries, questionnaire (discussions about usage of energy, green energy and energy saving).



Activity suggestions:

1. Have an introductory lecture about different types of energy – issues arising from the transformation of natural resources, discussion of intractable and inexhaustible natural resources.
2. Traditional energy sources - oil, natural gas, coal - polluting environment (air - greenhouse effect, global warming, etc.)
3. Alternative energy sources - water, wind, solar, geothermal, biomass (with its impact), atomic, other sources of alternative energy.
4. Creating projects and discussions with pupils about energy. Information and questionnaire about the use of energy in the country and partners involved. Saving energy - the best energy is one that is never produced and inexhaustible
5. Presenting findings, discussing the topic of energy.

Slovakia:



PPT of pupils – Types of energy (posters and presentations)

What more could we do at school to save energy?

Matej Havran, Simon Drenka (VI. class)

- Green roof with natural lighting.
- Solar panels - water heating for gym and kitchen, power generation.
- Thermal insulation of building - polystyrene / glass wool / thermoregulation coating = reduction of heat leakage.
- Rainwater Capture = Reduction of Water Resources Requirements, e.g. for watering.
- Charging station for electric cars / hybrids



Sources: www.zauimavosti.net, www.syrcom.sk,
www.estro.sk, www.kisvettis.aradva.sk,
www.energislinka.sk, www.eautopotral.sk
www.lo3energia.com, www.atribyto.com



eTwinning outcome:

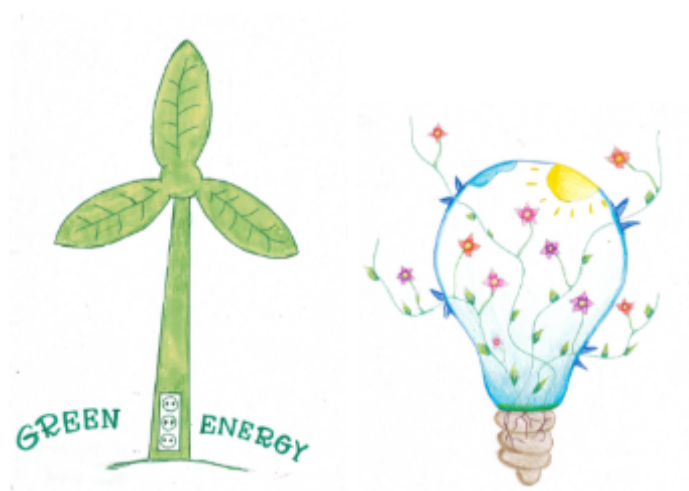
<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c1107dce7.pdf>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bbac4e67.pdf>



Co-funded by the
Erasmus+ Programme
of the European Union

Poland:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c812f6397.pdf>

Italy:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c0b55197.pdf>

Greece:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c2e191b7.pdf>

<https://youtu.be/Fn6eDrUJaU4>

36. *pH analyses*. Chemical analysis of water sources and soil in local area.

AIM: pH analysing of water and soil from local school environment, cross curricular connections with chemistry.

Activity suggestions:

1. Have an introductory lecture - pH as an indicator of environmental condition
2. Using of chemistry kit, pH meter to measure pH meter for measuring ph of water and soils from extract.
3. Measurement with pupils, estimated and real measured results, comparing of tables with results, comparing of measurements with pH digital meter and pH paper indicators.
4. Presentation of findings, discussion about water and soil pollution.



Slovakia:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c31266067.pdf>

Poland:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspace/7/67/967/60967/files/c3e316d7.pdf>



Co-funded by the
Erasmus+ Programme
of the European Union

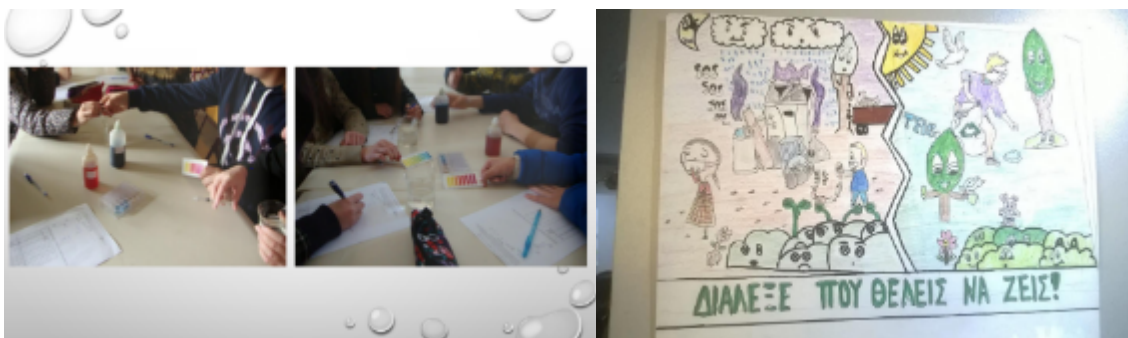
Italy:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c0b55197.pdf>

Greece:



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c0c30a37.pdf>

37. Pupils sum up results of env project research in each country, prepare „*Science and Art papers*“, that are outcomes of the project.

Activity suggestions:

1. Through art work pupils create their outputs on posters and presentations focusing on science.
2. The teacher and pupils hold discussion on presented problems
3. Pupils present and discuss their findings and art work.
4. They launch the exhibition of their project work in programme Cloud.



Various topics – Various outcomes „Science and Art“



eTwinning outcome:

Slovakia:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/bcadd787.pdf>

Poland:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c4f25897.pdf>

Italy:

<https://prezi.com/view/U2GDYJL9pOeRb2g2Lx6G/>

Greece:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c1d24ff7.pdf>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c3fe8f97.pdf>

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c410dd157.pdf>

38. Final partners meeting in Slovakia, preparing of *The Atlas* (illustrated by children, information about local environmental problems and environmental migrants, maps, photos, case study...), Activity C2 - training course to Slovakia with pupils. 05-06/2018.
Leading: SK





The last project meeting took place in Levice. Part of this meeting was an educational activity “C” for pupils from Poland, who visited Energoland at the Mochovce Nuclear Power Plant in the form of environmental excursions, where they had discussions led by natural resources and green energy experts. Two-day tour through the Tatras and dealing with environmental degradation - biodiversity loss, forest drying, calamity was also an important part of the program. In addition, they viewed national parks and territories registered by UNESCO.

39. The second ecofootprint of pupils in all participating countries evaluated at the end of project

The ecological footprint is a quantifiable indicator of human impact on the environment and it is part of the sustainable development agenda. Pupils in all countries, using an internet calculator published by the Slovak Environment Agency (<http://www.ekostopa.sk/>), measured their footprint twice at the beginning of the project and after two years of working on the project. The ecological footprint is evaluated in a separate chapter.

40. Knowledge test- the level of knowledge gained through project.

The second measurable indicator was a knowledge test that focused on all topics in a cross-curricular manner. Using online tools- (https://docs.google.com/forms/d/1CDBbPWzyI7ohbXO98VJMVwJ9Fnlg1azO4ksuMQ_QbfY/edit#responses). Pupils verified their knowledge. It is also evaluated in a separate chapter.



41. *Evaluation of the project, sociometry.*

An important part of the project is evaluation. To evaluate project activities, we used an online questionnaire for project teams and school head teachers.

Project Team Questionnaire:

https://docs.google.com/forms/d/1CDBbPWzyI7ohbXO98VJMVwJ9FnlglazO4ksuMQ_ObfY/edit#responses

Questionnaire for school head teachers.

https://docs.google.com/forms/d/1gxPILL4BPv0HDwpe1Dp1gkkv0VNkbqMjMHR_fOKWE5g/edit?usp=forms_home

Project teams from Poland, Slovakia, Greece and Italy wrote:

The participation in the project "Think globally, act locally!" was as great an experience for us, the teachers, as it was for our students. Within two years we realised many activities were very valuable to us. At first, we developed our knowledge of the impact of environmental changes on human life. Awareness of this influence will certainly result in permanent changes in the behavior and treatment of the environment by all participants. Project activities included the content of many school subjects and developed the abilities and interests of students. What is more, we have developed our skills in the use of ICT and English language competences in order to collect data and present our achievements more effectively. An important advantage of the project was the integration of teachers and students from various classes, developing their planning and organisational skills and ability to work in a team. Our activities also included pupils' parents, other schools and the local society, which significantly influenced the scope and impact of the project. Added value can be demonstrated in the friendship between partner schools, long-term relationships, cultural exchange and the presentation of good practices in education in partner countries. We strongly hope for joint activities in the future, because we all see their great impact on the students' competences, school staff and the prestige of the school in the local community.

Thanks to participation in the Project my knowledge concerning environmental issues has increased. I have learnt a lot about green energy and development in this area as well as



developing my understanding of problems that participating countries still have with the change to renewable energy usage. I have also improved my mind-set relating to environmental issues and about everyday decisions that can change the world and make it a better place. As a result, I can share my knowledge and approach with students along with their parents, my colleagues, friends and family. The project enhanced my interest concerning particularly green energy which has always been important to me. It has also triggered the research I have made about the world's newest achievements in this area as well as technical solutions and existing wind and solar devices for household usage. We have evaluated activities mainly through feedback given from students and their parents after conducting each activity. We have also compared our experience with other teachers' views and discussed conclusions. We conducted a survey among students taking part in the project. It covered the subject of changes the students observed in their attitude towards the environment and their everyday decision making, as well as their possible influence on global change. Moreover, the evaluation of the project included a display of students' work e.g. presentations, posters and meetings with environmental specialists. Additionally, the whole school consistently witnessed everyday changes that manifested themselves in the creation of the school garden. Beginning from building the site, sowing seeds and planting vegetables, through watching how they grow, become ripe and ready to pick, to the moment of nature's winter nap. The possibility of seeing nature making seasonal changes was an enormously important experience for children attending our school.

42. Summer holidays – finish with the project finish the project

After evaluating all the activities and feedback, it is important to economically close the project and put all the collected information in the final report. Also, at the end, the project teams communicated intensively with the use of ICT and the mobility tool.



Eco-footprint and knowledge test as measurable outputs of project goals

Ecological footprint is a method measuring the impact of human activities on planet Earth. This influence is expressed through the Earth's surface area needed for our daily activities and consumerist lifestyle. At the same time, it figures out whether our needs are fair towards other inhabitants on Earth and in accordance with its biological capacity.

Ecological Footprint can be calculated by an individual, school, organization, city, or country. It represents the total amount of land necessary to provide everything we consume (energy, water, food, clothing, materials) but also for the disposal of created waste. The larger the footprint, the greater the impact on nature. Thanks to international trade, our footprint often affects territories situated all over the world.

The calculation is based on three simple principles:

- We are able to estimate the quantity of natural resources we consume and the amount of waste we produce;
- Most of these resources and waste can be converted into the amount of corresponding biologically productive area of the Earth (arable land, pastures, forests, water surface and built-up areas);
- One hectare of biologically productive area of the Earth is referred to as a global hectare (gha); one hectare is about the size of a football field.

It is very simple Mathematics

We have only one planet! Only one ecological account that represents an area of 51 billion hectares. However, a significant proportion of the Earth's surface is not available to humans. This area is covered with the World Ocean, deserts, rocks or ice.

Surface area of the Earth ... 51 bn ha

Unavailable area (surface) ... 39.1 bn ha

Productive area (surface) ... 11.9 gha

Population of the Earth ... 6.7 bn

Fair proportion of the Earth's surface per person $[11.9/6.7] = 1.8$ gha

Average eco-footprint per person on Earth ... 2.7 gha

Difference $1.8 - 2.7 = -0.9$ gha



There are only 11.9 billion disposable global hectares of biologically productive area. This area provides all the natural resources and services we need. It can be classified into 6 categories according to people's usage:

- cropland is used for growing crops, which are needed for making food, textile manufacturing, production of rubber, vegetable oils, but also fodder for cattle;
- grazing land provides space for stock-raising, which is used to produce meat, as well as dairy, leather and wool products;
- forest for timber and fuelwood produce lumber, which we use for the production of building materials, paper, wood products and fuels;
- fishing ground are used for breeding and rearing of fish in coastal areas, as well as in lakes and ponds;
- built-up land consists of roads, parking lots, houses, stores, industrial buildings and all areas covered with concrete;
- forest for carbon dioxide uptake eliminate gaseous waste, particularly carbon dioxide (CO₂), that we release into the atmosphere by fossil fuel combustion for the transportation of passengers, food and goods and for the production of electric power and heating.

The current world population is approximately 6.7 billion. The fair share of the biologically productive space for each human being is 1,8 global hectares. However, the current average ecological footprint of each person has reached 2,7 global hectares. That means that the Earth's bio capacity has been exceeded by approximately 50% and the current consumption level of humankind requires an area equal not to one but 1.5 planets. We deplete natural resources and services faster than they can recover. We are reaching the end of our resources and are continuing to interfere with the regenerative capacities of the Earth. This can go on temporarily, but not forever!

WATCH OUT! Natural resources are not distributed evenly. Some countries consume more natural resources than is available for them. They outpace their own capacity and deplete other nations' resources. If every person in the world lived like an average US citizen, mankind would need nearly 4.5 planets. On the contrary, if we lived like an average Zambian citizen, only half of the planet would suffice.

Source: <http://www.ekostopa.sk/what-is-an-ecological-footprint> (2010).

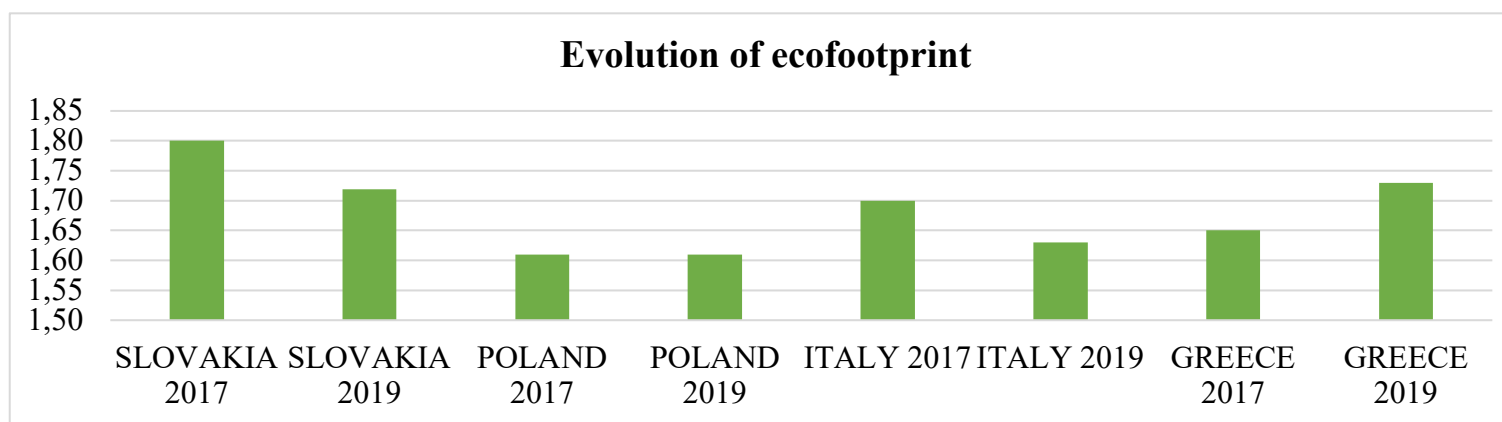


Table with results:

Country/information	SLOVAKIA 2017	SLOVAKIA 2019	POLAND 2017	POLAND 2019	ITALY 2017	ITALY 2019	GREECE 2017	GREECE 2019
Summary of pupils	115	107	65	101	91	100	100	100
Average age	11,6	12	13,53	14,1	13,7	15,3	10	11,25
Average global hectares	3,78	3,61	3,38	3,38	3,51	3,39	3,41	3,58
Average of planets	1,80	1,72	1,61	1,61	1,7	1,63	1,65	1,73

The table shows the number of tested pupils, their average age, the average of global hectares and the average number of planets per study group. The data is also graphically stated in the graph where the development and changes in the ecological track can be monitored as a measurable output within the framework of sustainable development

Graph of results:



Source: Countries data by years and measurements.



Co-funded by the
Erasmus+ Programme
of the European Union

In the table and graph we can follow the development of ecological footprints of pupils in participating schools. In Slovakia, the ecological footprint of pupils has decreased. The number of planets that pupils need dropped from 1.80 to 1.72 planets. At the Polish School, the number of planets stayed unchanged. In Italy, the ecological footprint also fell from 1.70 to 1.63 planets. In Greece, the average ecological footprint increased slightly from 1.65 to 1.73. The group of tested pupils was approximately the same.



eTwinning outcome:

<https://twinspace.etwinning.net/files/collabspac/7/67/967/60967/files/c1cac521.pdf>

In addition to their approach, we also checked the level of knowledge gained from environmental activities by the on-line testing test developed by teachers from participating countries.

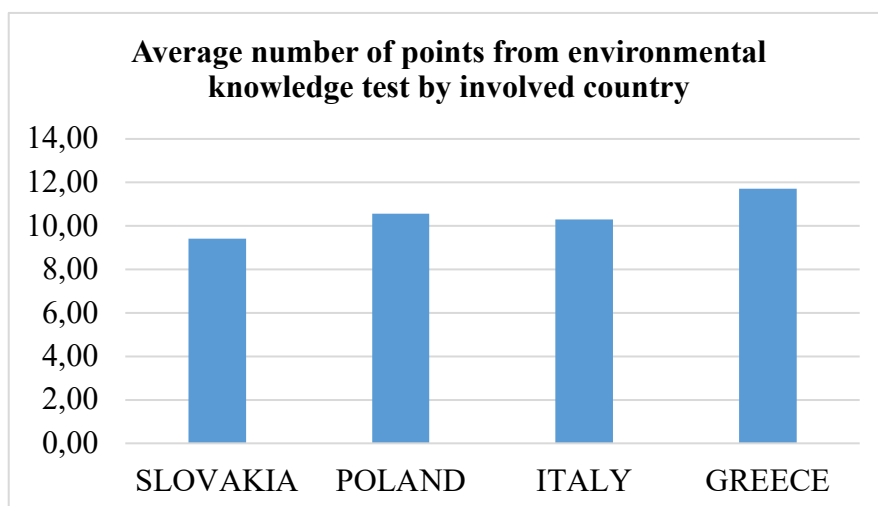
Table:

Country/information	SLOVAKIA	POLAND	ITALY	GREECE
Summary of pupils	107	101	100	100
Average age	12	14,1	15,3	11,25
Average points	9,40	10,57	10,29	11,71



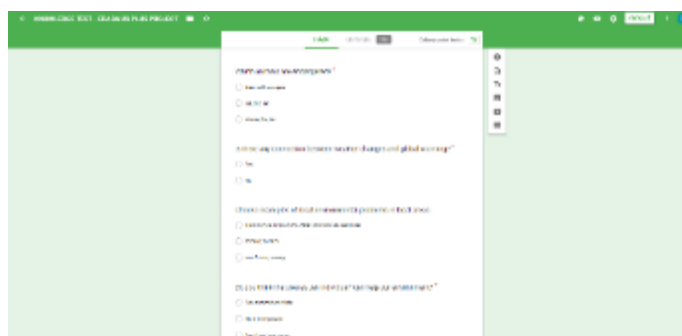
Co-funded by the
Erasmus+ Programme
of the European Union

Graph:



Source: Country data according to measurements in online testing

Pupils were asked 12 closed questions in the test based on previously solved environmental activities. Slovak pupils received an average of 9.4 points, Polish 10.57, Italian 10.29 and Greek pupils the most, 11.71 points. The maximum number of points that could be received was 12, the minimum score was 0. In each country they also earned a maximum score. The minimum number was not obtained in any of the countries.



Two measurable outputs are a sufficient quantifiable output for the project, where improvements in environmental impact can be monitored through ecological footprints, besides a slight reduction in Greece and equality in Poland. However, during running the project some pupils have changed schools due to frequent fluctuation from primary to secondary schools and different school systems of the countries. As part of the environmental knowledge test, countries have reached an average of 10.49 points, which is approximately 87.41% of all pupils involved.

Project feedback from our Head teachers

An integral part of the educational process in the 21st century is the participation of educational institutions in international projects that extend participants' knowledge and skills and remove the differences between nations and individuals. We, like many other schools in Slovakia and Europe, over a period of two years, participated in the international project involving teachers and pupils from Italy, Poland and Greece.

As Erasmus + project coordinators, Think Globally Act Locally! ” We tried to fulfil the basic idea of the project and to focus our and the other participants’ attention on the most important area of our life, which is environmental protection. Through creative and original project activities, involving primary teachers and pupils, we have learnt the importance of nature protection at a regional level. They have gained some knowledge about the sights and natural beauty of each country.

Perhaps only when they had visited The Acropolis of Athens and the Tatra mountains did they realise that we are an integral part of nature and our duty, as teachers and parents, is to remind the young generation constantly about the need for proper environmental behavior and the protection of living and inanimate nature.

We believe that we have built an international community of pupils, parents and teachers through our project activities. We made small but important steps by which we have contributed to environmental protection through the ‘Think globally, act locally’ project. We have raised awareness across our communities about the importance of recycling, saving and protecting our environment. As a wider European community, future generations will benefit from the impact of our good decisions, as well as suffer the consequences of our misjudgements.

PaedDr. Marta Botková,

Head teacher of coordinating Primary school

Základná škola, Ul. sv. Michala 42, Levice, Slovakia



It is with great pleasure that I am writing this reflection on the Environmental Education Atlas, relating the whole experience of our schools during the four country partnership project: “Think globally, act locally”. During the last two years, teachers and pupils of Slovakia, Poland, Greece and Italy have been cooperating in fruitful activities regarding the connections and relationship between local versus global phenomena impacting on the survival of human beings and animals on our planet. In my opinion the main goal reached by this project is the heightened level of awareness among our students relating to the consequences that each single act can cause on a broader scale since in our interwoven world. Single behaviours can no longer be considered isolated as we live in a” Global village”. Children had the opportunity to exchange data and news about temperature, family life styles, animal extinction, international migrations and other items. We hope that this creation will help them to reflect on future policies relating to the preservation of our common Earth. Through this project we have strengthened the friendship among our four European countries, each one part of the same Union. Our cultural exchange has improved our knowledge of other school systems and heritage, we have learned from each other’s differences. For this great opportunity I heartily thank my partner head teachers and, especially, the Slovak staff who led the project.

*Mrs Raffaella Reali, Head teacher
Istituto Comprensivo “Leonardo da Vinci”- San Giustino (Perugia) Italy*

This two-year project which now comes to an end has promoted citizenship, active and collaborative learning, and environmental education. The whole school has benefited from the process since an eco-group was set up with the aim of promoting environmental issues and suggesting solutions for our school and local community. Some of the ideas that we have discussed and decided to implement as part of the project are outlined below. One of the things that we are particularly proud of was the building of a hydroponic garden on the premises of our school where all classes have had the chance to grow their own vegetables. We have replaced all the light bulbs at school with energy efficient ones and the pupils are responsible for turning them off when not needed. Clean-up campaigns have been organised in order to celebrate environmental days and the whole school participates in various



recycling schemes. The project has empowered our pupils to disseminate the knowledge they have gained to their parents, classmates and neighbouring schools. They feel confident enough to speak about the need to protect the environment locally and globally, about energy saving and climate change. Finally, the pupils have decided to have car free days and get to school on foot, or carpool if they live far away from the school. The end purpose is to reduce the ecological footprint of our school and become sensitive to environmental issues.

George Kappis, Head teacher

2 DIMOTIKO SHOLEIO ZOGRAFOU, Athens, Greece

The main goal of the project "Think globally, act locally!" was to show the impact of environmental damage caused by natural or man-made events and their consequences on the quality of life. The project included a lot of activities in which many teachers, as well as students of our school, were involved. The great value of these activities was their interdisciplinarity, because they combined issues from different school subjects. The project activities concerning environmental protection involved students talented in Science and the Arts as well as Natural Science. For pupils and teachers, the project represented an excellent opportunity to exchange experiences, develop language competences, learn about culture in partner countries and feel citizens of Europe. The program has strengthened the conviction of how valuable it is to establish international cooperation with other schools in Europe, to increase knowledge and competences among students and teachers, as well as the prestige of the school in the local environment. I strongly encourage Headteachers to undertake such valuable activities involving their teachers and students as the benefit to the school community is great.

Marek Lipiec, Head teacher

Publiczna Szkoła Podstawowa nr 17 im. Przyjaciół Dzieci w Radomiu, Poland



Conclusion and summary of the project

The project “Think globally, Act locally!” was based on current global environmental problems and the long-term intention of participating schools to implement modern environmental education in the primary school education process.

At the same time, it followed up on the previous Erasmus + coordinating school project, which aimed to implement the CLIL method in teaching Science and educational subjects, with an emphasis on improving the level of language competence not only for pupils but also for teachers. For a better exchange of experience, the project activities also involved five transnational project meetings in each participating country and two educational activities for pupils abroad.

International cooperation, existing knowledge of global environmental issues and the CLIL method helped us to reach our project goals successfully. Through this project we wanted to highlight one of the key problems of our planet, which touches each of us, because we humans are part of it.

The basis for the successful implementation of the project was an excellent team of teachers and an open approach from school headteachers from four European countries: Slovakia, Poland, Italy and Greece, who worked closely together to create various methods and forms of project activities, overcoming problems and helping each other. All these things mentioned above helped many pupils in participating schools and local communities feel involved and informed.

We believe that the output of the project summarized in the Atlas of Environmental Education with more than 40 activities, methodological descriptions and demonstrations of real outputs from participating schools will help other organizations to actively influence humanity's environmental awareness. The final result of the main goals of our project “Think globally, Act locally!” is the reduced ecological footprint of pupils, teachers and high level of environmental knowledge.

If the school and its teachers decide to engage in environmental education, they must be firmly convinced that they are acting properly and in the interests of our planet.

Environmental education is a specific subject. No-one should be forced to accept it. However, everyone should decide for themselves and participate in environmental and "green" thinking, which can lead them to a different approach towards natural resources,



energy, waste generation and processing, as well as nature itself. It reduces their ecological footprint and they gain a greater knowledge of more environmentally friendly approaches to our planet Earth.



References

- DUCHOVIČOVÁ, J. A KOL. 2012.** *Teoretické základy výchovy a vzdelávania.* Nitra : Pedagogická fakulta Univerzity Konštantína Filozofa v Nitre, 2012. 294 s. ISBN 978-80-558-0144-5
- FRANTZ, C. – MAYER, F. 2014.** *The importance of connection to nature in assessing environmental education programs.* In Elsevier – Studies in Educational Evaluation. ISSN 0191-491X, 2014, vol. 41. p. 85-89
- FRYKOVÁ, E. 2010.** *Environmentálna výchova vo vyučovacom procese.* Bratislava : Metodicko-pedagogické centrum v Bratislave, 2010. 56 s. ISBN 978-80-8052-348-0
- GALLAYOVÁ, Z. 2005.** *Environmentálna výchova.* I. vydanie. Zvolen : Technická univerzita vo Zvolene, 2005. 79 s. ISBN 80-228-1431-8.
- KOMPOLTOVÁ, S. A KOL. 2002.** *Environmentálna výchova – Smerovanie k trvalej udržateľnosti.* Bratislava : Štátny pedagogický ústav, 2002. 80 s. ISBN 80-85756-71-4
- KURINCOVÁ, V. a kol. 2008.** *Základy pedagogiky.* Nitra : Univerzita Konštantína Filozofa v Nitre, 2008. 236 s. ISBN 978-80-8094-445-2
- NEVŘELOVÁ, M. 2008.** *Environmentálna výučba vo výchovno-vzdelávacom procese.* 1. vyd. Bratislava : Cicero, s.r.o., 2008. 90 s. ISBN 978-80-969678-2-7.
- PALMER, J. 1998.** *Environmental education in the 21st century – Theory, practice, progress and promise.* Florence, KY, USA : Routledge, 1998. 298 s. ISBN 978-02-0301-265-9
- PAVLÍK, O. ET AL. 1985.** *Pedagogická encyklopédia Slovenska 2 P-Ž.* Bratislava : Univerzita Komenského, Encyklopedický ústav SAV a Veda, vydavateľstvo SAV, 1985. 702 s.
- PETLÁK, E. 2004.** *Všeobecná didaktika.* 2. vyd. Bratislava : Iris, 2004. 311 s. ISBN 80-89018-64-5
- PETRO, M. - BINEKOVÁ, E. 2009.** *Ekologická výchova.* Prešov : Gréckokatolícka teologická fakulta PU, 2009. 100 s. ISBN 978-80-8068-977-3
- PETROVIČ, F. 2011.** *Environmentálne hľadiská trvalo udržateľného rozvoja Zeme.* 3. vyd. Nitra : Fakulta prírodných vied UKF v Nitre, 2011. 156 s. ISBN 978-80-558-0021-9
- RYNDA, I. 2000.** *Trvale udržateľný rozvoj.* In Geografické rozhledy. ISSN 1210-3004. 2000. vol. 10/1. p. 10-11



ŠTÁTNY PEDAGOGICKÝ ÚSTAV, 2015. *Prierezové témy – Environmentálna výchova.* [online]. Bratislava : Štátny pedagogický ústav, 2015. [cit. 2015.08.27]. Dostupné na internete: <<http://www.statpedu.sk/clanky/statny-vzdelavaci-program-svp-pre-druhy-stupen-zs-prierezove-temy/environmentalna-vychova>>

ŠVECOVÁ, H. 2003. *Cross-curricular Activities.* Oxford : Oxford University Press, 2003. 62 p. ISBN 978 019 4421881

VINCÍKOVÁ, S. 1998. *Teória a prax environmentálnej výchovy.* Banská Bystrica : Slovenská agentúra životného prostredia, 1998. 41 s. ISBN 80-967893-2-5

ZSÓKA, Á. ET AL. 2013. *Greening due to environmental education? Environmental knowledge, attitudes, consumer behavior and everyday pro-environmental activities of Hungarian high school and university students.* In Elsevier - Journal of Cleaner Production. ISSN 0959-6526, 2013, vol. 48. p. 126-138.

Online sources:

<http://www.ekostopa.sk/what-is-an-ecological-footprint> (2010)

https://wiki.rvp.cz/Knihovna/1.Pedagogicky_lexikon/E/E-U-R (2019)

