

COMPARATIVE ANALYSIS OF GOOD PRACTICES

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ABSTRACT

During the project, each of the 8 partners identified and investigated 5 good practices on ICT innovation in the educational and cultural sector of their respective countries. Interviews were carried out using a common frame defined within the objectives of the project with the implementers of those programmes. The 40 best practices investigated were compared based on the following aspects: innovation, media, digital competences developed, attention to the development of other contemporary competences, link to the active citizenship, role of the teacher, apps, devices used and approach to technology. The 5 selected good practices were compared among themselves in each separate partner's country. Afterwards, after the table some points have been distinguished uniting or separating practices and which caught researcher's attention.

KEYWORDS

**GOOD PRACTICE
EXAMPLES ON ICT**

MEDIA EDUCATION

DIGITAL COMPETENCES

DIGITAL ATELIER

INTRODUCTION TO THE REPOSITORY

During the project, each of the 8 partners identified and investigated 5 good practices on ICT innovation in the educational and cultural sector of their respective countries. This was done in order to have a clear framework and possibility of positioning the "Digital Atelier" and the methodologies which were chosen to be spread in the project.

Project partners wanted to mention those good practices in the manual and organisations implementing them for your inspiration and reference as well. Interviews were carried out using a common frame defined within the objectives of the project with the implementers of those programmes. The interviews might be found on the project website here: www.appyourschool.eu/category/activities/national-toolkits/. Some interesting aspects related to the good practices distinguished by partners themselves might also be found here: www.appyourschool.eu/european-manual/. The 40 best practices investigated were compared based on the following aspects: innovation, media, digital competences developed, attention to the development of other contemporary competences, link to the active citizenship, role of the teacher, apps, devices used and approach to technology. These aspects were considered as important for the development of the Digital Ateliers in this project as well as their adaptation, use on the national level in 8 European countries.

Thus, further below the table is provided with the main points distinguished after analysis of selected good practices. At first it should be mentioned that the 5 selected good practices were compared among themselves in each separate partner's country. Afterwards, after the table some points have been distinguished uniting or separating practices and which caught researcher's attention.

In the following pages we'll see comparison of some Good practices' in 8 European countries.

CZECH REPUBLIC

www.appyourschool.eu/category/activities/national-toolkits/best-practices-czech-republic/

ANIMATED SHORT FILMS

by
ELEMENTARY SCHOOL OF ART - MUSICART

PAINTINGS AND DRAWINGS ON PROJECTIONS FROM THE EXHIBITION "THE RESTLESS FIGURE"

by
EDUCATIONAL DEPARTMENT OF THE PRAGUE CITY GALLERY

PHOTOGRAPHIC ART GAMES

IN THE EXHIBITION OF PHOTOGRAPHER MILOTA HAVRÁNKOVÁ

by
EDUCATIONAL DEPARTMENT OF THE PRAGUE CITY GALLERY

PHOTOGRAPHIC STYLIZATION BY SAM SHAW'S PHOTOGRAPHS

by
EDUCATIONAL DEPARTMENT OF THE PRAGUE CITY GALLERY

PROJECT IN&OUT

by
ELEMENTARY SCHOOL OF ART - MUSICART

COMMON ASPECTS

1. In activities pedagogical content must be appropriately and carefully thought out, and then ICT is an appropriate and creative tool;
2. Development of knowledge, visual and digital literacy, critical thinking, communication skills and own creativity;
3. A deeper understanding of the formal and content aspects of activity can be seen through the verbal reflection of the participants and comparing their views before and after the activity.

INNOVATIVE ASPECTS

1. Giving as much space to the participants to support their creativity. Basic and easily available tools are used (PC, data projector, digital camera, smartphones, ordinary printer etc.);
2. One of the most important aspects is interdisciplinarity - main dimension, which is included in the activities - for example combination of art education and other disciplines - crossovers due to biology, physics, ecology, photography, literature, linguistics, typography and so on. That's why workshops/art projects can be used in many subjects and disciplines in schools - it's ideal platform for "project education". Among innovative aspects belong also intermediality and interactivity.

IT / ICT / MEDIA / DIGITAL COMPETENCES DEVELOPED

1. Development of animation skills: animation principles, language of motion, storytelling, connection between motion pictures and sound (folly effects and music);
2. Development of photographic skills: camera principles, photo editing and possibility of outcomes;
3. Development of working with text, letters, fonts in connection with typography and graphical design.

OTHER COMPETENCES DEVELOPED

1. Visual, literary and emotional literacy;
2. Media literacy;
3. Technical skills;
4. Contextual cognition;
5. Interpretation skills;
6. Communication skills;
7. Group work;
8. Improving orientation on the art field and also improving knowledge of art techniques (in this case drawings and paintings), advancement of a visual literacy, critical thinking, communication skills and development of own creativity;
9. Physics - optics, digital photographing, photo processing and alternation.

LINK TO ACTIVE CITIZENSHIP

1. Knowledge in art improves the social intelligence and arts in general help to identify and develop emotions, teach about social interaction and show students how they can communicate a message to other people;
2. Art activities, which are parts of workshops, provide big free space for expression of self-identity, inner space and own opinions of students. They can find out, that art is free, unlimited and safe for their originality and uniqueness. It teaches students to be more tolerant and how to support living in peaceful coexistence with each other;
3. Workshops can integrate disadvantaged people (handicapped children, pupils and students, seniors, migrants) very effectively. Especially for migrants and people, who don't know our language, art is the best way, how to integrate themselves (almost "without words" but more by pictures and art creations), because art is international (universal) language;
4. Art workshops/creation can develop communication and team cooperation;
5. Workshops can encourage students to further discover the nature and our world. Also, kids want to continue the activities related to digital technologies at home and intention is to show them how to use their own devices for interesting activities and artistic purposes;
6. Crossovers to ecology and biology can support students to like our planet and environment more and to motivate them to take more care about it;
7. Crossovers to literature, linguistics and typography can motivate children and students to like texts, books and reading more.

ROLE OF THE TEACHER

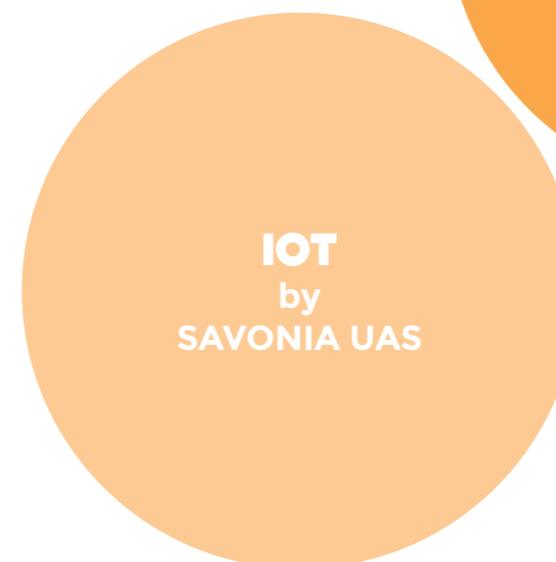
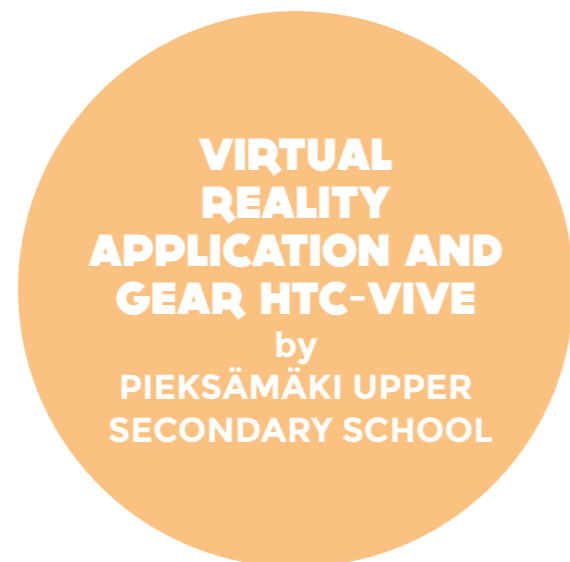
1. Teacher designs the activities;
2. Teacher is a partner and guides of students;
3. Teacher presents inspiration and examples;
4. Teacher shows the ways and possibilities for working;
5. Teacher provides materials and tools for working;
6. Teacher do supports and motivations for students;
7. Teacher helps resolve any complications;
8. Teacher brings new ideas and knowledge.

APPS, DEVICES USED

1. Devices: computer, tablet, smartphone, digital camera, scanner, copier, printer and data projector, microphone;
2. Software: Dragonframe, Photoshop, Sony Vegas;
3. Apps: Photo Director, Photo Editor, and so on.

APPROACH TO TECHNOLOGY

1. Combination of various media formats and platforms to create innovative content;
2. To implement digital tools as regular option in art creation using for their specific qualities;
3. Not to distract from the reality through PC games but to approach the reality that is later being observed, interpreted etc.;
4. The important aspect is also the level of skills regarding the ICT. The more the students and teachers are experienced, the more they can use and avail the whole potential of the ICT and the more they can understand the risks and dangers of virtual reality and social networks.



COMMON ASPECTS

1. The use of the most innovative technologies in the education process;
2. Student projects are based on real needs.

INNOVATIVE ASPECTS

1. The innovative points of Flipped Classroom pedagogy are that instead of the teacher standing and lecturing in front of the classroom students are actively involved in course and content creation;
2. Upper secondary students learn new things in a manner which combines creativity, problem-solving, data mining and ICT skills;
3. Using HTC Vive gear as a supportive system at human anatomy classes; students can take any part of the human body - organs, individual muscles, textures etc. - and step by step learn about them;
4. Co-operation with companies is a motivating factor.

IT / ICT / MEDIA / DIGITAL COMPETENCES DEVELOPED

1. Basic programming competencies, coding, IoT skills, Wireless technology skills, sensors;
2. Different programming skills like embedded, web, DSP, database, mobile and desktop programming. Learn algorithms for navigation, for handling bio signals with neural networks or Non Negative Framing Matrix (NFM) method;
3. Basic functions of Industrial Internet 4.0;
4. Artificial Intelligence;
5. Configurations of mobile devices; their usage;
6. How sensors work;
7. Handling of data;
8. Making mobile application with Android environment.

OTHER COMPETENCES DEVELOPED

1. Creativity, critical thinking, communication and Collaboration;
2. Increased and developed students' interaction with the teacher;
3. Electronics, communication, English language and literacy;
4. Learn how companies work, how to get cashflow from services, learn to make business models, project development tools like GANT models etc.;
5. Navigation and location awareness;
6. Independent work skills.

LINK TO ACTIVE CITIZENSHIP

1. Education institution is cooperating with businesses;
2. Students get skills for different start-ups;
3. The creation of devices, systems useful for meeting the needs of the society.

ROLE OF THE TEACHER

1. Assignments to the students about the topic of a certain lecture; research at home and then teacher observes their work;
2. Teacher guides the students to the solution using problem-based learning techniques instead of giving direct answers;
3. Teacher is only a coach who is controlling that everything is going to the timetable.
4. Teacher helps in difficult technical things and makes procurements;
5. Teacher can also call other experts to help in problems.

APPS, DEVICES USED

1. Smartphones, tablets, computers, laptops;
2. HTC Vive;
3. Arduino and Raspberry, Different sensors;
4. Laptops Cameras, Drones for flying platforms;
5. Desktops for servers' side;
6. Small electrical cars and robots;
7. Atmel Studio, Visual Studio etc., Microsoft .NET, MATLAB, IBM WATSON, Hadoop platform, Labview, SQL tools;
8. SAMI system;
9. Indoor Atlas or GPS.

APPROACH TO TECHNOLOGY

1. HTC Vive gives teachers a unique possibility to produce new and innovative course contents and students a novel way to explore school topics in a concrete and tangible manner;
2. HTC Vive work station is placed at the lobby of the school and is free to be experimented by any student or visitor;
3. Students study, design and 3D print objects both during the classes and in their extracurricular activities;
4. The involvement of students at the use and presentation of novel technological tools.

GREECE

www.appyourschool.eu/category/activities/national-toolkits/best-practices-greece/

POV CLOCK – PERSISTENCE OF VISION CLOCK

by
UTECH LAB, TECHNOLOGY
LABORATORY
AT EUGENIDES
FOUNDATION

COMMON ASPECTS

1. Combination of the real and the digital world;
2. Hands-on experience;
3. New, digitalised approaches to the learning process.

INNOVATIVE ASPECTS

1. During the workshop, the participants learn the DIY process, the basic principles of electronics, physics (Optics), coding, the trial and error process;
2. The way the multimedia approach is used in order to tackle a specific topic;
3. The use of online social networks as tools for the classroom;
4. The initiative and autonomy that each team takes in order to define their strategy, planning and path to follow; learning in a playful way; participants use their mobile devices and specific applications as learning tools, accepted by their teacher, and not just as gaming machines or tools for a simple daily communication;
5. Out of the box learning methodology that promotes mistakes and embraces failure. Students learn how important it is to make mistakes in order to analyse, evaluate them and then move to the next level. This practice is based on interactive design cycles, collaboration, working in teams and tinkering;
6. A key for the success -is the gamification of learning. Participants learn about games' theory and gamification and its role in everyday life.

LOGO IN EDUCATION: A COMMUNITY OF PRACTICE AND LEARNING

by
KATERINA GLEZOU,
(TEACHER AND
COFOUNDER)

SCHOOL BULLYING

by
NOUS, INSTITUTE
OF DIGITAL LEARNING
AND COMMUNICATION,
NGO

IT / ICT / MEDIA / DIGITAL COMPETENCES DEVELOPED

1. Getting acquainted with video editing tools, augmented reality books and apps and 3d glasses;
2. Familiarity of the participants with computers and software;
3. Reinforcement of their digital storytelling skills;
4. Promoting good online behaviour;
5. Using online social networks as tools;
6. Developing skills in coding, crafts, design, electronics, 3D design and 3D printing.

OTHER COMPETENCES DEVELOPED

1. Critical thinking, teamwork, cooperation and active involvement, enhancing creativity;
2. Learn about the persistence of vision phenomenon (PoV);
3. Cultivation of empathy;
4. Learning to give feedback to each other;
5. Historical, cultural, environmental, economic and social elements of the area;
6. Orientation in the city based on digital maps;
7. Conducting research on attitudes and behaviours of others in an open space;
8. Communication with strangers;
9. Problem solving in consultation with the group;
10. Democratic dialogue;
11. Creative and innovative design;
12. Project planning, documentation, presentations and how to communicate ideas.

DIGITAL SPACE-SENSITIVE GAME WITHIN THE CITY

by
PANTELIS TSOLAKOS,
EDUCATOR

LINK TO ACTIVE CITIZENSHIP

1. Participants use technologies for storytelling to approach the sense of active citizenship, as the program is aiming to raise awareness to school bullying and its consequences (prevention of social exclusion and school bullying);
2. Participants move to an important area of the city that was previously unknown. They meet the various aspects of the area (historical, cultural, social, economic) with the help of their portable digital devices, e.g. online videos, web pages, augmented reality. They investigate the human environment (humans and human artefacts) for information mining and they integrate their discoveries into a shared, custom designed, online game;
3. Participating in an online group and actively engaging in collaborative activities mobilizes pupils as it is something new to them, something unusual in the common didactic-learning process;
4. Cultivating the concept of an active democratic citizen who communicates, participates, creates and cooperates as a team member;
5. A themed based scenario, like being a team of creatives hired by a big games industry company in order to design their next big thing! There are no limits as if it has to be a video game, a board game, or a sports game but it has to be related to technology at some point.

ROLE OF THE TEACHER

1. Most activities are designed to provide hands-on experience for the participants and not just lectures. In this respect, the participants feel more comfortable, more engaged and less "instructed" by teachers;
2. The children are active participants in the learning procedure and not passive viewers. Via the online platform there is an ongoing communication, interaction and collaboration between students and teachers;
3. Unlike traditional teaching, all children are active and continuously involved with the teacher being there as an assistant to their task;
4. Openness, authenticity, flexibility and elasticity of the teacher for equal treatment of pupils and situation management.

GAME DESIGN

by
ROBOTIXLAB

APPS, DEVICES USED

1. 3D glasses
2. Arduino;
3. 3D printers;
4. Video editing tools;
5. Augmented reality books;
6. Blogs, chat, wiki, portable digital devices (tablets, smartphones);
7. Google Drive, Google FusionTable,
8. SMS creation application;
9. MIT AppInventor (Android application programming and development platform for mobile devices);
10. GPS, hotspot creation for internet access;
11. Wires, LED, resistors, motors, batteries, wrenches;
12. 3D printed parts, computers, electronics kits, as well as coding.

APPROACH TO TECHNOLOGY

1. Through the use of coding and Arduino boards aims to provide stimuli and inspire young people to experiment with modern technologies, foster critical thinking, encourage teamwork and active involvement, enhance creativity and gain problem solving skills;
2. Building on the familiarity of the adolescents with computers and their ability to quickly learn new software;
3. Students are invited to use online tools for communication and collaborative work. They are encouraged to exchange ideas, materials, to learn how to give and take feedback and to cultivate a respectful online behaviour;
4. Learning through discovery (exploratory approach), group collaboration and field study inspired by Harteveld's triadic digital game design;
5. Participants are free to use a combination of a vast variety of analogue and digital materials (also involving electronics, programming, 3D printing).

SCHOOL OF ROBOTICS by SCHOOL OF ROBOTICS GENOVA

COMMON ASPECTS

1. Letting kids build their own interfaces - their own interaction with the work of art;
2. The link between the physical and the digital;
3. Using a peer-to-peer approach;
4. The connection between the experience at the museum and at school, giving continuity to the experience;
5. Potential of the devices in fostering creative and active participation.

INNOVATIVE ASPECTS

1. Palazzograssiteens is a web platform that offers teenagers information about artists and themes in the Pinault Collection, encouraging them to visit exhibitions at Palazzo Grassi and Punta della Dogana by offering the explanations and interpretations of their peers;
2. With the use of AR for content production and through the posting and sharing of this content to the virtual showcase (google keep) the project in Museo Africano also gives continuity to the experience from museum to the school and back to the museum;
3. Kids build their own interfaces through "bugs" in which they insert an Arduino card. The bug guides them randomly through the museum, they create their own interaction with the work of art;
4. Taking a so daily and intimate "tool/ instrument", that is so essential and important for the adolescents and using it in a diverse way, in a group work to create art;
5. By designing, constructing, programming and testing mobile robots, children learn the basic concepts of today's technical systems. They learn to handle sensors, motors, programs and a graphical software development environment. They learn that constructing technical systems is a creative process that is not easy but strengthens their self-confidence in their own technical skills.

BUGBITS AND SOUNDSCAPES by MART AND THE UNIVERSITY OF TRENTO

IT / ICT / MEDIA

/ DIGITAL COMPETENCES DEVELOPED

1. Using devices such as tablet and smart phones, Facebook and WhatsApp;
2. Learning how to use the devices to produce contents (out of the general ones they are used to);
3. Learning to comprehend what happens between interface and action;
4. Management of more screens contemporaneously - my screen as a detail of a collective image;
5. Assembling and programming robots;
6. Robotics collects all the competencies needed for designing and constructing machines (Mechanics, Electrotechnics, Electronics), computers, software, systems of communications, and networks.

OTHER COMPETENCES DEVELOPED

1. Critical listening;
2. Curiosity, exploration, and experimentation are developed;
3. Critical exploration;
4. Sensory skills;
5. Work in groups;
6. Scientific skills: Physics, Electronics;
7. To go beyond "the like/ I do not like - nice / ugly" - critical analysis;
8. Logics;
9. Comprehension of space.

MUSEO AFRICANO by THE AFRICAN MUSEUM AND VILLAGE

LINK TO ACTIVE CITIZENSHIP

1. Critical approach to world in general, to art, to what is around you with the creative use of technology;
2. Work in a group to achieve a common goal - to work within a community;
3. The experience of the "small" transported in a field of participation - active use of your device in a participatory way, responsibility in the use of a communication device with the conscious use of contents and finding a "together" in this consciousness;
4. Reflection on "public"/"private": In the process of sharing their opinions and impressions and in making them public they reflect about "what to share" - sharing and publishing of information;
5. To realize their environment through hearing and so enhancing perception of your environment using different senses.

ROLE OF THE TEACHER

1. Is a mediator, coordinator and director;
2. Fosters horizontal knowledge transfer: peer-to-peer - from teens to teens;
3. Is open for commune learning: learning and exploring together with the students;
3. Organizes space: for example, in small tables so students can work in small groups, interact with each other and have open access to the materials;
4. Adopts the activity to the group: for example, to define for each and every time the digital tools that are useful to students to carry out their tasks.

PUZZLE SMARTPHONE by AVISCO

APPS, DEVICES USED

1. Arduino;
2. Google keep;
3. Aurasma;
4. Smart phones, tablets;
5. LegoEV3;
6. NAO;
7. Makey Makey;
8. Web cams;
9. Social media.

APPROACH TO TECHNOLOGY

1. The use of tools of everyday life of teenagers to produce rich and meaningful content; (palazzo grassi teens);
2. The use of technology as a tool, a conductor, that leads the kids to see and hear differently, through play and the joy of discovery - approximating art through play, science and marvel;
3. Technology is used together with other tools in order to create "hands-on", sonorous and visual experiences in order to see art works in the museum, not only from different "points of view" but also from other sensorial aspects;
4. Creating a link between the physical and the digital: together with Arduino, makey makey, important materials are pens, glue, scissors, etc.
5. Workshops start with a "story" and research, which students work out together (cooperative writing);
6. Use of robotics within the framework of existing and teaching institutions and integrating it within different school subjects - and not as an extra subject itself;
7. Participants comprehend technology as an additional tool to approach art and the aesthetic in general.

PALAZZO GRASSI TEENS by PALAZZO GRASSI AND PUNTA DELLA DOGANA

LITHUANIA

www.appyourschool.eu/category/activities/national-toolkits/best-practices-lithuania/

**ROBOTIKOS MOKYKLA
(ROBOTICS SCHOOL)**
by
ROBOTICS SCHOOL

**MOBILE SCIENTIFIC
LABORATORY**
by
A PROJECT FOR
LITHUANIAN SCHOOLS
INITIATED BY THE A
CONSORTIUM
OF PARTNERS

**MENAR'S
METHOD**
by
MENAR ACADEMY

**MOBILE
FAB-LAB**
by
FAB LAB

**ANIMATION
ACADEMY**
by
COLLEGE OF SOCIAL
SCIENCES

**CODE
ACADEMY
KIDS**
by
CODE ACADEMY

COMMON ASPECTS

1. Students are engaged to learn science, technology, engineering, arts and math (STEAM curriculum) while equipping them with the real-world knowledge required by today's global society;
2. True learning takes place when students discover on their own through hands-on, minds-on approach, experimentation;
3. Combination of meaningful work and organized leisure activities is an effective and fun way of learning;
4. It is expected that after workshops participants will create some invention useful for the people, or develop a start-up, a successful future career;
5. Individualized approach that enables students to progress at their own pace.

INNOVATIVE ASPECTS

1. Bringing robots to everyday life;
2. Focusing on STEAM curricula;
3. Self-evaluation performed by children;
4. Encouragement of positive self-development;
5. Focusing on the creation of the chosen project, not a certain subject;

IT / ICT / MEDIA / DIGITAL COMPETENCES DEVELOPED

1. Ability to creatively use the computer graphics processing programmes;
2. Learning programming in a fun way;
3. Using digital animation programmes;
4. Training on open source code platforms;
5. 3D printing;
6. Creating a website page, logotype, computer game or mobile app.;
7. The ability to enter the digital information into the computer in various formats;
8. Ability to use computer input and output devices;

OTHER COMPETENCES DEVELOPED

1. Imagination;
2. Creativity;
3. Logical and analytical thinking;
4. Solving problems;
5. Entrepreneurship;
6. Teamwork;
7. Accuracy to details, structured problem solving;
8. To connect knowledge of different subjects;
9. Ability to test the "universal truths";
10. To communicate thoughts and ideas in an effective way.

LINK TO ACTIVE CITIZENSHIP

1. Reducing the challenges faced by disabled people via technological means (f.e. helping blind people to experience reality via 3D models printing);
2. Recycling electronic devices in a creative way (f.e. creation of vibrobots, sculptures, moving bugs);
3. Bringing technologies to rural areas (through libraries in small villages);
4. Themes chosen and results obtained are useful for the whole community (solving some acute problem in the city/ region/ school);
5. Promoting STEAM to make life of people easier in the future.
6. Creation of short movies/ videos related to social responsibility.

ROLE OF THE TEACHER

1. Individual work of students (but teacher is always there for help);
2. Teacher is the organiser of learning space and just leads students through the process;
3. Try not to limit the imagination of children;
4. Encouraging the invention of new things;
5. With the help of technologies to reveal students' talents.

APPS, DEVICES USED

1. 3D printer
2. LEGO Mindstorms;
3. Arduino
4. Android cell phones
5. Raspberry PI
6. Intel Galileo
7. Solidworks
8. Google Cardboard; Glasses@
9. HTC VIVE VR
10. iPad
11. Maya.

APPROACH TO TECHNOLOGY

1. Engaging and motivating students to learn science, technology, engineering, arts and math (STEAM curriculum) while equipping them with the real-world knowledge required by today's global society;
2. True learning takes place when students discover on their own through hands-on, minds-on approach;
3. With the help of technologies to encourage the entrepreneurial competences;
4. Sometimes it is expected that participants will create some invention useful for the people;
5. To find new technological solutions.

POLAND

www.appyourschool.eu/category/activities/national-toolkits/best-practices-poland/

SAFE E-SCHOOL by FUNDACJA 5 MEDIUM

COMMON ASPECTS

1. Stimulating young people to take cultural initiatives for their local community;
2. Using technologies in a safe way;
3. Using latest technologies in the education process;
4. Games as new education tools helping to include disadvantaged young people;
5. To introduce a new way of thinking about education into Polish schools and promote principles that support up-to-date and effective education.

INNOVATIVE ASPECTS

1. Encourage teachers to learn from students;
2. E-learning platform: participants are presenting their activity on the
3. web, blog, e-platform;
4. Collaboration between schools and their local communities;
5. Use of open educational resources: free licenses, software, photos, films, programs, apps;
6. Design-thinking methods.

SCHOOL WITH CLASS 2.0 by FUNDACJA SZKOŁA Z KLAS

IT / ICT / MEDIA / DIGITAL COMPETENCES DEVELOPED

1. Use of e-platforms, browsers, blogs, apps;
2. How to use graphic programs and app (preparation, editing of presentations, photos, films);
3. How to use self-phones in different ways;
4. Game as a good educational tool;
5. Safe behaviour in the internet;
6. Skilful use of basic CC licenses and knowledge of basic copyright issues;
7. Creation and use of open educational resources;

OTHER COMPETENCES DEVELOPED

1. Informational behaviour - searching for information, critical evaluation, verification of sources and fake news;
2. Learning about language of the media, how to promote your project, how to communicate, design thinking;
3. Creativity;
4. Ability to cooperate and share knowledge;
5. Problem solving skills;
6. Journalism skills.

MEDIA LAB WARSAW by FUNDACJA CULTURE SHOCK

MEDIA ACTIVISTS by FUNDACJA CULTURE SHOCK

LINK TO ACTIVE CITIZENSHIP

1. Students walk out of their schools to lead projects with their neighbours and districts (i.e. children, seniors, residents);
2. Realization of local, socio - cultural events;
3. Blog and other on-line activities are related to the life of the local community;
4. Cultural-local project, using ICT and their media literacy competencies;
5. To encourage youth to observe their neighbourhood, develop passion and became a local activist.

ROLE OF THE TEACHER

1. Support students in every stages of the project;
2. Encourage students;
3. Take part in all workshops and activities;
4. Partner of students (gives advices on every steps of project planning and realization);
5. Is open to learn from his/her students (Teacher learns themselves);
6. Monitors the students work, is responsible for the execution of the program tasks.

GENERATION CODE by ASSOCIATION OF CREATIVE INITIATIVES

APPS, DEVICES USED

1. Blogger - www.blogger.com
2. Pixlr Editor - pixlr.com/editor
3. Pixlr Express - pixlr.com/express
4. Popplet - popplet.com
5. Magisto - www.magisto.com
6. Powtoon - www.powtoon.com
7. Youtube Editor - www.youtube.com/edit
8. Thinglink - www.thinglink.com/i
9. MEMES - www.memy.pl
10. Wordle - www.wordle.net
11. Tagxedo - www.tagxedo.com
12. Lightbeam - www.mozilla.org/pl/lightbeam
13. Google Translate - translate.google.pl
14. Online Convert - www.online-convert.co
15. Voki - voki.com
16. Answer Garden - answergarden.ch

APPROACH TO TECHNOLOGY

1. Connection between media literacy, digital competencies, new technologies with socio - cultural projects;
2. Develop network legal expertise (e.g. use photos, film, music on free licenses);
3. Know-how of use media and internet in the safe way (i.e. protect privacy, virtual image);
4. Use of new technologies in a deliberate, well-thought and justified way (ICT as a tool and not as an end in itself);
5. Digital literacy in use i.e. software, records, graphical, photo and film programs, apps, use self-phones in different ways.

TURKEY

www.appyourschool.eu/category/activities/national-toolkits/best-practices-turkey/

CODING AND ROBOTING by ŞEHİT SAİT ERTÜRK ORTAOKULU

COMMON ASPECTS

1. Promoting the use of ICT technologies in the learning process.

INNOVATIVE ASPECTS

1. Most students are using technology only for communication and playing games, with this project they start to use their knowledge for creating applications and games. Coding education supports learning skills in different areas such as mathematics, literacy and science;
2. Providing equal opportunities in education and improving the technology in schools in a way that informatics technology tools engage more senses in the educational process;
3. To go out of school by students, teachers and parents with the purpose of reading and combining disciplines - ICT, literature, social sciences;
4. Improving social aspects of students and creating different corners in schools as areas fun for educational activities. It aims to bring the scientific, artistic and sports aspects of students to the foreground, to raise awareness of different cultures, to increase students' sense of belonging to students and to minimize their negative attitudes and behaviours.

FAITH INTERVIEW by ESENLER İLÇE MİLLİ EĞİTİM MÜDÜRLÜĞÜ

IT / ICT / MEDIA / DIGITAL COMPETENCES DEVELOPED

1. Using internet, photo designer, and word processing programmes;
2. Increasing the technology usage rates, making the use of technology lessons more effective and expanding students' imagination;
3. Using internet as a tool to make a research.

OTHER COMPETENCES DEVELOPED

1. Creativity, responsibility, awareness;
2. Mental thinking skills and problem-solving skills improve;
3. Coding provides confidence;
4. Finding different solutions;
5. Improving creative thinking and interactive working;
6. Individual evaluation, individual learning, improving self-confidence, interactive learning under the guide of teacher;
7. Self-esteem;
8. Social responsibility and volunteer awareness.

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LINK TO ACTIVE CITIZENSHIP

1. Going out of school by students, teachers and parents with the purpose of reading and combining disciplines -ICT, literature, social sciences;
2. Students are working together with their friends and after creating an application they are sharing this application with other friends and also on the internet;
3. Students are using corridors for working on research works with their computers. Teachers give research works to all students and they should prepare them between lessons using their free time, in this way they are working together with their friends;
4. Students work as volunteers in a social responsibility project; they help people who need help.

ROLE OF THE TEACHER

1. Learning how to search and find true information under the guidance of teachers;
2. Individual evaluation, individual learning, improving self-confidence, interactive learning under the guidance of teacher;
3. Teachers are able to share the materials produced in classrooms with their students, assign them homework, measure the learning levels in a more controlled way via classroom management;

COLORFUL STORIES by BRAHİM TURHAN ÇOK PROGRAMLI ANADOLU LİSESİ

EACH CORNER by GÜZİDE ÖZDİLEK KIZ ANADOLU MAM HATİP LİSESİ

APPS, DEVICES USED

1. Coding languages such as C # or JavaScript;
2. Internet, PowerPoint;
3. Smartphones, tablets, Lego Education Sets, Laptops;
4. Interactive boards, multifunctional printer;
5. High speed and secure internet (VPN), EBA platform;
6. Word-processing, photo designer, social media platforms;
7. Barcode reader;
8. Projector, "Indesign".

APPROACH TO TECHNOLOGY

1. Usually students use technology only for communication and playing games, with different workshops they start to use their knowledge for creating applications and games.

PORTUGAL

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COMMON ASPECTS

1. Recognition of blended learning as a way to motivate students and reduce early school leaving.

INNOVATIVE ASPECTS

1. Students' responses to real-world problems working in teams;
2. Specialized teachers in different field of education, such as robotics, microcontrollers, mobile apps, programming and Math and Science aimed to spread their knowledge to increase students' participation in learning and better prepare them for their future jobs or career all over Europe;
3. Opportunity created to live different learning experiences;
4. Totally changing from paper to digital textbooks, for a period of 3 years;
5. Increasing the capacity of teachers in handling ICT and providing students with a useful tool for accessing knowledge in a personalized way (through television).

IT / ICT / MEDIA / DIGITAL COMPETENCES DEVELOPED

1. Learning code and robotics;
2. Develop devices to record scientific experiments;
3. Building some simple devices to help younger students practice mathematical notions;
4. Producing Learning objects (Educational resources) related with Maths and Science;
5. Producing educational games with devices like robots and microcontrollers.

OTHER COMPETENCES DEVELOPED

1. Flexibility & Adaptability;
2. Initiative & Self-Direction;
3. Social & Cross-Cultural Skills;
4. Productivity & Accountability;
5. Leadership & Responsibility;
6. Imagination and creativity;
7. Collaborative skills and teamwork;
8. Relational skills regarding emotions and feelings;
9. Problem solving;
10. Critical thinking, increased motivation and employability.

LINK TO ACTIVE CITIZENSHIP

1. Parents are connected with teachers, helping to improve the academic performance of their children (through ICT);
2. Projects being developed in schools of the poorest regions in Portugal;
3. Students responsible for preparing workshops to other colleagues and teachers;
4. New methodologies with scenarios and project-based learning, students' responses to real-world problems working in teams with students from all countries;
5. Contributing to reducing the school drop-out rate with the help of ICT, new approaches to learning.

ROLE OF THE TEACHER

1. Teachers and students learn together and from each other by using techniques similar to the "Khan Academy": teachers create interactive lessons, give assignments and track progress of students using platforms such as Educreations, Vittle, etc;
2. Although teachers were there to support if needed, students were the tutors of the workshops, so previously they had to gain new knowledge, understand new concepts and present their work to partners and also teach them to use other devices.

APPS, DEVICES USED

1. Ipad
2. Youtube;
3. National television channel
4. Samsung Tablets
5. Samsung Smart School Platform
6. Socrative
7. Kahoot
8. Edmodo
9. Aurasma
10. Dash & Dot robots
11. App Go, App Path, App Blockly
12. Raspberry PI
13. Parrot Drones
14. Educreations
15. Vittle

APPROACH TO TECHNOLOGY

1. Develop students' computational thinking skills always trying to use the official and formal curricula;
2. Use of a diverse set of existing digital tools can support learning and enable a paradigm shift in teaching processes;
3. Television can be an effective way for students to learn pedagogical / programmatic content.

What unites all good practice examples over 8 European countries is, first of all, that the tasks, projects are based on solving real life situations and problems (hands-on experience). In this way the value of what is being done is felt, the activity itself is meaningful and replicable in everyday life. The focus is on the project, not on the subject and so many subjects are connected (interdisciplinarity).

In many schools throughout Europe the most modern technologies are being used (of course, it depends on the national context, the area where the school is situated, etc.). The focus in most good practices is not on the technology itself (nowadays it is easy to find tutorials how to use the programme or app), but on the innovative, creative and diverse ways to use it, to combine analogic and digital tools to create something totally new, to see from a different point of view.

However, in some schools still the focus is to help students learn to use different IT tools, to bring them into the learning process also to educate teachers themselves in using them. This might be most probably explained by different education systems. It might be noted that the innovations related to modern technologies are being brought to rural or more underdeveloped areas and schools (f. e. Lithuania, Portugal, Turkey).

Another important aspect to mention is the cooperation with local communities – working with community and for community, to create some invention useful for it (for example, reducing the challenges faced by disabled people, recycling, etc.). Attention to entrepreneurial competences from the early age is also observed. Participants of the workshops are encouraged to develop a start-up, find new technological solutions, etc.

Another important aspect to mention is that in many countries robotics is considered already as inseparable part of our lives – some projects, workshops focus on their construction, programming (f. e. Lithuania) whereas in other countries (f. e. Italy) the robotics is used within the framework of existing and teaching institutions and integrating it within different school subjects.

If coming to each partner's country separately, the following aspects might draw our attention:

- In good practice examples selected by Lithuanian partners it might be observed, that due to a shortage of specialists from STEAM field a lot of attention is being paid to develop the necessary science, technology, engineering, arts and math skills.
- Good practices selected by Polish partners focus more on cultural initiatives with the help of different IT tools and inclusion of disadvantaged people.
- In Portugal a lot of attention is being devoted to reducing early school leaving with the help of ICT, new approaches to learning (for example, using television and in this way also including parents into their children's education process).
- In Italy the selected good practice examples focus on the development of a peer-to-peer transfer of knowledge and experiences linked with the transfer of cultural heritage, developing divergent media usages that help teenagers to develop a critical understanding on their everyday objects and practices, fostering creative and active participation.
- In Greece as a good practice example the project which uses social networks in the learning process has been distinguished as well as tackling bullying – one of the most acute problems in most of the European schools – in a different way.
- In Turkey good practice examples promote ICT use in the learning process, contribute to improving social aspects of students, going out of school by students, teachers and parents to experience learning in a different environment.
- In the good practice examples identified by Czech partners, art activities are at the centre and through them / with their help social intelligence is improved, they provide free space for expression of self-identity, own opinion and is a form of disadvantaged groups' integration.
- In Finland the most modern technologies are subjected into the learning process, higher level digital competences are developed (however, it is important to mention that the good practice examples include older age participants (students) compared to the project target group).

Different projects, workshops, ateliers contribute to the development of 21st century: creativity, critical thinking, problem solving, analysis, team work, cooperation, collaboration, communication, initiative, self-evaluation, etc. As very important competences the critical thinking, listening, exploration, going into deeper analysis are being emphasised in the selected good practice examples. Contemporary issues are also at the centre of attention – safe and respectful behaviour in the internet, identifying fake news, verification of sources, tackling school problems – bullying and expression of emotions.

The range of digital and media competences developed is very wide:

programming, coding, creating websites, logotypes, video, sound, picture editing tools, safe behaviour in the internet, creating robots, etc. The range of ICT technologies used to develop, reveal digital and media competences is very broad: from the latest apps and tools to experimentation with smart phones and tablets to create something totally unique. The most popular programmes, apps used throughout good practice examples over 8 European countries (to mention just a few): Arduino, Raspberry, HTC VIVE, Kahoot, Aurasma, 3D printers, 3D glasses, tablets, smart phones, etc. In some schools, however, smart phones are excluded in the learning process. As a new and effective educational tool gamification is mentioned. The gamification of the learning process might be a key to success in increasing students' motivation.

The changed role of a teacher – a mentor, a partner, an inspirator, a guide in the process, an active learner together or from students. Teachers design the activities or give a task to students to do an independent research; present inspiration and examples and give participants space to experiment, express self-identity. Teacher's role is no longer static. He / she also encourages peer to peer learning. Teachers welcome mistakes, failures which are important parts of the learning process.

Also, important to mention that the learning process happens everywhere – it is transferred to different spaces (squares, museums, city streets, virtual reality, television, social networks, etc.). Promoting new thinking, paradigm shift in teaching process might be observed in many countries involved (in Polish, Portugal schools).

The elements described above perfectly support the concept of "Digital Atelier" where educational experience starts from an ICT content to develop then a manual task, with tools and materials, in order to start a personal and collective research with participants. Students are asked to use their extracurricular skills to solve problems in new ways, being the attitude that of the "researcher" who is both autonomous and involved in the group. The Digital Atelier focuses on the creative use of the new media and apps, on the promotion of a creative and innovative attitude to use and interact with media, to carry out successful digital actions embedded within life situations.



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