

**THE
APP YOUR
SCHOOL
EXPERIMENTATION**

-

**A MANUAL
FOR FUTURE
ACTIVITIES**

TABLE OF CONTENTS

- 7 **CHAPTER 1**
THE APP YOUR SCHOOL PROJECT
The APP YOUR SCHOOL project
Main axes of the project
- 17 **CHAPTER 2**
THE EXPERIMENTATION IN
THE PARTNER COUNTRIES
Czech Republic
Finland
Greece
Italy
Lithuania
Poland
Turkey
- 59 **CHAPTER 3**
COMPARATIVE ANALYSIS
OF GOOD PRACTICES
Introduction to the repository
Czech Republic
Finland
Greece
Italy
Lithuania
Poland
Turkey
Portugal
- 81 **CHAPTER 4**
DIGITAL ATELIER AND THE DESIGN
OF ICT IN SECONDARY SCHOOLS
Digital Atelier: let's start with the definition
Our research on Digital Atelier started from the dictionary
In relation with other european contexts (as in the example of Portugal)
How can a Digital Atelier be designed and realized in practice?
APP YOUR SCHOOL: from consumption to invention
Technology at school

- 91 **CHAPTER 5**
MEDIA EDUCATION IN THE DIGITAL ATELIER
The EU call and the partners
Media education and definitions within the project
The development of Digital Ateliers
A categorisation
Conclusions
Appendix: DAs titles, key questions and codification
- 103 **CHAPTER 6**
CONTEMPORARY ART, MULTIMEDIA
AND INNOVATION IN EDUCATION
The trend
Conceptual art
Interdisciplinarity
Art as a means of expression
New media
Conclusion
- 113 **CHAPTER 7**
THE NEVERENDING STORY
OF STUDENTS ABILITIES
Digital media literacy and civic participation
An analysis of the teachers' and experts
What skills did the students make use of?
What outcomes did the Digital Ateliers yield?
How did the Digital Ateliers produce these outcomes?
Conclusion
- 121 **CHAPTER 8**
ACTIVE CITIZENSHIP, CIVIC
ENGAGEMENT OF YOUNGSTER
IN THE FINLAND EXPERIMENTATION
Assignment
General background
Active citizenship definition in the literacy
Multiliteracy linked to active citizenship
Civic engagement definition
Youngster want to act with citizenship
How school can support civic engagement and active citizenship
Digital Ateliers, civic engagement and active citizenship in Finland

- 129 **CHAPTER 9**
PEDAGOGICAL NEEDS FOR TEACHERS TO INTEGRATE ICT IN THE FORMAL SCHOOL CURRICULUM
Pedagogical Knowledge
How can teachers integrate technology into their teaching?
The TPACK framework
The Challenges of Teaching with Technology
What are the collaborative approaches to learning?
- 135 **CHAPTER 10**
DIGITAL ATELIER FROM A TEACHER'S PERSPECTIVE
3 reasons to give it a go
How to start? Practical tips
My experience of Digital Atelier: teachers' reflections
- 141 **CHAPTER 11**
HOW TO TRANSFER THE APPYOS APPROACH?
Key points to keep in mind to design a Digital Atelier
Digital Atelier: sheet for first proposal
A manifesto for those who deal with technology and learning
From consumption to invention
Essential features
- 159 **CONCLUSION**
- 165 **BIOGRAPHIES**

One day, a Hindu teacher showed his pupils a piece of paper with a black dot in the middle.

«What can you see?» he asked.

And they replied: «A black dot!»

«What?» said the teacher, disappointed. «None of you could see the great white space all around it?»

CHAPTER 1

THE APP YOUR SCHOOL PROJECT

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ABSTRACT

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This chapter introduces the project **APP YOUR SCHOOL**, the philosophy behind it and its main axes: how to insert technology in the curricula, how to link with Media Education and civic engagement, built connections with Art, Multimedia and Pedagogical Innovation, value extracurricular skills and student's motivation/dispositions (especially in the case of students at risk of Early School Leaving).

KEYWORDS

TECHNOLOGY

CURRICULUM

**MEDIA EDUCATION CIVIC
ENGAGEMENT**

ART

**MULTIMEDIA AND
PEDAGOGICAL
INNOVATION**

**EXTRACURRICULAR
SKILLS**

EARLY SCHOOL LEAVING

SYNTHESIS STARTING FROM THE APPLICATION

The project **APP YOUR SCHOOL**, funded by the European Commission within the Erasmus Plus Programme, aims to support new ways to think and design digital competences in schools, by testing and implementing innovative practices in the field. The partnership of the project, consisting of 8 consortia of media education organizations with secondary schools in Italy, Portugal, Greece, Poland, Czech Republic, Lithuania, Finland and Turkey, made possible that schools of 8 European countries work together on a such important subject.

We tried to create complex didactical situations that challenge teachers and students alike, in line with their individual needs and expectations, and that value the media literacy competences on both sides. Channelling the technological skills of the students and their “Media-Cultures” (cfr. Genevieve Jacquinet), to imagine new public services for citizens and new ways of creating knowledge and culture, for instance designing projects to transform reality and new developments of their local communities . Thereby concentrating on the ability “to use skills and technologies in the daily life: **digital literacy involves being able to carry out successful digital actions embedded within life situations**”¹. The project aims to implement new transversal methodologies that open a dialogue among students, schools and societies, promoting a development of the school as place to imagine, think and “test the future”. The active methodologies of Alberto Manzi² and Bruno Munari³, implemented in the project and spread in Europe are both very appreciated in Italy for their educational attainment. Alberto Manzi, was a teacher and pedagogue with great experience in using television and media to promote literacy, in working with young detainees at the Aristide Gabelli in Rome or with disadvantaged students around Italy. Bruno Munari, a designer who invented a new approach as the children’s atelier. Both approaches together are able to **transform school teaching models offering new ways to work both for students and for teachers**, which are more linked to the current technological opportunities and closer to the school success of more disadvantaged students. These new methodologies **facilitate the valorization of the capacities of the single student**, its creative potential that often stays out of the school, seeking to involve also those students most at risk of school drop out and to support schools to tackle Early School Leaving, in line with the objectives of the Europe 2020 Strategy.

Our initial idea was that there were extracurricular skills of

¹ *Mapping digital Competence: towards a Conceptual Understanding*; Kirsti Ala-Mutka, European Commission Joint Research Centre, Institute for Prospective Technological Studies, pp. 29

² Alberto Manzi Biography: see pag. 166

³ Bruno Munari Biography: see pag. 168

students which remained unexplored in the school setting: these are **skills related to a passion for technology, mostly developed in teenagers' free time**. The school could enhance them by bringing them to the surface and using them creatively, fostering each student's success and working towards a common collective goal. We gave the space and time in which this occurs the name "Digital Atelier": two great teachers – Alberto Manzi and Bruno Munari – led the concept and design of the Digital Ateliers described in this toolkit/manual.

"We are preparing individuals for a completely unpredictable future, we do not know what science and technology will devise in twenty or thirty years' time; we do not know how the increasingly sophisticated information media will succeed in spreading knowledge, in involving people. **We know nothing: we only know that our students will have to face a world that is unknown to us**, and for which we can not prepare them just by passing on knowledge. We will prepare them to face the unpredictable, that is to know how to 'think', to know how to face a problem, 'any' problem, to know how to understand it, analyse it, get to grips with it, solve it. This is 'creativity'. We must learn to tolerate uncertainty, to think critically in the face of the unexpected, to exploit all the ideas and opportunities that these same ideas offer us; to make and undo, that is to create experiences and formulate hypotheses from them that can then be 'transformed' by subsequent experiences; to discover correlations and interdependencies. Or simply: to think and think and think".

In this wonderful passage by the teacher Alberto Manzi about *Education ... but what is it?* we find the idea of a **Digital Atelier that challenges situations and technologies to become tools**, materials and settings in which to "make and undo" problems, triggered by teenagers' curiosity for technology or connected to their daily life at school and at home.

Eight consortia of schools and centres in different European countries have worked with this shared idea/definition of "Digital Atelier". The European teachers involved met in Bologna, at the Alberto Manzi Centre, for two one-week courses in two different school years: 2016/2017 and 2017/2018, exploring together in this collective training what a Digital Atelier could be and led the 44 experimentations with the students in the school year 2017/2018.

MAIN AXES OF THE PROJECT

THE APPROACHES OF ALBERTO MANZI AND BRUNO MUNARI

These two active methodologies born in Italy thanks to 2 different experiences, were both applied in our experimentation to digital technologies. Alberto Manzi has built in his teaching technology as a powerful tool for creating meaningful experiences for students, always connecting the real presence (and objects) with more virtual and abstract aspects. Bruno Munari, with the typical curiosity of the designer, had already begun to design workshops that would propose new uses for technology. The most famous example is the use of the copier to create “originals” and not to make “reproductions” of documents. His artistic practice explored technology as an unusual instrument of expression.

More in detail:

ALBERTO MANZI was an important Italian pedagogue and teacher known for his innovative use of technology to face and solve illiteracy. His method has different steps: creating a cognitive tension (with real questions that open a passionate research, with the aim to deepen, affecting the daily life of the student and not far from their experience), to know what students know, to understand their knowledge on the topic, their experiences and point of views, which “words” they use do speak and define the topic, which misunderstandings or wrong knowledge, designing concrete experiences that allow children to do and “undo”, to predict, to collect data, compare and argue, to share and clarify information and point of view. To conclude with a new question which restarts the research and puts students in the arrangement to desire, to know more, and to understand better.

BRUNO MUNARI was a designer and artist, collaborator of the Children’s Castle of Tokyo and “inventor” of workshops for children. He proposed a method from his experience as a designer and his expertise at industrial level: children work in an environment where they could experience materials, techniques and tools. At the beginning, they discover the limits and potential of materials, tools and techniques in a phase named “exploratory”. In a second part, students have the possibility to classify their research’s elements, their data and their analysis. After they start to design and project some more specific ideas using materials, tools or techniques, by coming to terms with the constraints and technical possibilities.

The “Digital Atelier” we tested in the **APP YOUR SCHOOL** project is a new educational format that is a combination of these two approaches with ICT. The strength of the “Digital Atelier” consists in combining concrete and tangible aspects with virtual and technological aspects, permitting the analogical and the digital to meet and go deeper on the educational experience, promoting a creative and artistic approach. The link between real objects and virtual experiences and vice versa (the link between virtual objects and real experiences) could generate new approaches for learning linked to social change and innovation. The interaction between technologies and our life enables media education and media literacy (as a goal) to enter deeper into the creative contexts capable of social and educational challenges.

INSERTING TECHNOLOGY IN THE CURRICULA

One of the aims of this project is to create complex learning situations that allow students and teachers to really feel challenged to solve problems through digital creativity. Our proposal of the Digital Atelier, moving from the DIGCOMP framework for Developing and Understanding Digital Competence in Europe, supports skills on the area of problem solving and development of creativity and imagination:

- **TO SOLVE PROBLEMS:** identifying potential problems and solve them with the help of digital tools
- **TO IDENTIFY NEEDS AND TECHNOLOGICAL RESPONSES:** identify needs in terms of resources, tools and skills development; identify possible solutions to meet the identified needs; to adapt the tools to the personal needs; critically evaluate the possible solutions and digital tools.
- **TO INNOVATE AND CREATE USING TECHNOLOGY:** actively participate in the digital and multimedia collaborative productions, express themselves creatively through digital media and technologies, producing knowledge and solve conceptual problems with the help of digital tools.
- **TO IDENTIFY DIGITAL COMPETENCE GAPS:** understand where their skills can be improved or increased and support others in developing their digital skills; maintain a constant updating.

The Digital Atelier proposal focuses on discovering and questioning reality and life, working with strategies and tools that permit creation and transformation. A further specific objective of the project was to develop the competences of the teachers through the establishment and promotion of complex didactical situations that challenge teachers and students alike, in line with their individual needs and expectations, and that value media literacy competences on both sides. The role of the teacher is one of a key element in the transition of school extern solitary consumer relation with digital knowledge into collaborative productive processes, in supporting a divergent approach to technology, in promote active participation through digital tools. The training of the teacher in innovative methodologies was therefore crucial because it supported teachers to manage technologies and digital experiences in a new way, closer to their interests and abilities, increased motivation and satisfaction in their daily work. Now, new materials for the work and the training of “animatori digitali” (teacher expert in ICT) and teachers can be spread thanks to the experimentation of the Digital Ateliers around Europe.

National and European agendas often concentrate on the dangers of the digital, like cyberbullying, hate speech or privacy violation. The time dedicated to the experimentation of the creative potential of digital knowledge seems rather short, as well as the guiding of these potentials into public engagement and active citizenship. It is also often the insecurity of the teacher in changing didactical models and leaving his/ her comfort zone that makes a transition of such competences difficult.

There has been a big concentration of the National and European agendas on the dangers of the digital, concentrating on the risks and safety of children in the use of ICT, with projects that have codified didactical models and debates on media education. Researches like EU Kids Online highlight for example video gaming mostly as a solitary activity: one screen, one active child. This solitary use of games and ICT is indicative of infant solitude in the exploration of the digital world (studio Happy Onlife - Commissione Europea, Centro Comune di Ricerca, Ispra (VA), pp 47). Until now there isn't a diffusion of codified didactical models that allow an exploration of the digital, dialoguing with aspects of the real, connecting the dimension of the single with the community and valorizing a creative approach instead of a "Prevention of the risks and dangers" approach. Our experimentation aims to propose new materials and ideas to support an approach based on the valorization of students skills and experiences, on creativity and imagination to design new schools projects. 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. Each Digital Atelier stands alone and has 6 hours duration and objectives, so that teachers, trainers or educators could use various ateliers by combining them in different ways according to their curriculum objectives.

Our main objective was to value media literacy of students, their competences developed out of schools, through the development of Digital Ateliers that can support skills and ideas to promote their engagement in active citizenship and to promote young creativity.

We faced 3 difficulties:

1. THE SENSE OF AGENCY OF YOUNGSTERS:

Often young people do not imagine that they can activate changes in their local community, that they can start new paths, new projects. Do not even think, too often, to involve adults in their ideas and their ideals. Teachers and students, by working together in digital projects, in an open and welcoming dialogue, can allow to build projects that help adolescents (and adults) to take part of the community life;

2. TAKING THE FLOOR IN PUBLIC SPACE IS ALWAYS COMPLEX:

In the Digital Ateliers, collective cultural production and small public events have been stimulated and open to other non-participating groups, to support and reinforce the abilities of adolescents, in the expression of a point of view in the life of their community.

3. CREATING INCLUSIVE SITUATIONS IN WHICH ALL STUDENTS COULD FEEL APPRECIATED AND USEFUL:

At the basis of participation there is the trust in one's own possibilities and the ability to know how to build positive and constructive relationships. In Digital Ateliers, the students' digital abilities (true or simply declared) were a good start to build a welcoming and purposeful atmosphere. The project sought to identify paths and strategies, resources, facilities and support to promote teenagers participation.

ART, MULTIMEDIA AND PEDAGOGICAL INNOVATION

Our project tried to design and experiment Digital Ateliers that took inspirations from digital art. An example of reference is Christiane Paul, curator of New Media Arts at the Whitney Museum of American Art in New York. We were inspired by how digital art questions reality by proposing questions and new collective projects. Digital Art also opens up to the theme of participation, involvement and interactivity. Investigates the divergent use of tools, as Bruno Munari did with the photocopier. New ideas for teaching have come from the work of contemporary artists, photographers, documentaries... The approach of Bruno Munari, contemporary art and digital research have made it possible to link contemporary subjects, topics and issues with the daily use of media and ICT, in a creative way, implementing the "Digital Atelier" as new format and new pedagogical model. Contemporary art and installations, ICT, cultural services and common work materials were mixed in students' and teachers' hands. The media content is a new space of "signification" and becomes the material of labour of the student who interacts in a divergent way.

FROM EXTRACURRICULAR SKILLS TO COMPETENCES

A specific objective was furthermore to integrate extra school competences of the students into the school curricula: in the time spent outside the school students acquire knowledge and competences that often remain out of the school sphere, wasting a big creativity and knowledge potential that could be integrated into educational processes.

Students were challenged to use their extracurricular skills to solve problems in new ways. The idea is to promote an attitude that is one of the "researcher" who is both autonomous and involved in the group.

STUDENT MOTIVATION / DISPOSITIONS

(Especially students at risk of Early School Leaving)

When we face students risking early school leaving we need to work with them supporting their curiosity, finding new words to tell their stories in a positive way, new ways to question reality and life, to understand the world around them and to inspire new social actions. With our proposals of Digital Ateliers we had in mind to reinforce the recognition of their skills, support a positive, welcoming and valued work atmosphere that would allow, where necessary, to improve self-esteem, develop a greater capacity of linking everyday digital experiences with school contents, increase the level of digital competences and improve the ability to reflect on issues concerning technology in everyday life.

To do this we plan to design new “Digital Atelier” as a “good place” to motivate students to use ICT for personal and community benefits, while developing their creative potential. The “Digital Atelier” is a “laboratorio” in which the teacher proposes ICT activities using the Alberto Manzi and Bruno Munari methodologies. The teacher will be able to design an educational experience that starts from an ICT content (for example an app) to develop then a manual task, with tools and materials, in order to start a personal and collective research with the students.

**THE
EXPERIMEN-
TATION IN
THE PARTNER
COUNTRIES**

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ABSTRACT

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This chapter reports a synthesis of the national experimentations implemented within the **APP YOUR SCHOOL** project in general and by country, indicating number of teachers and students participating in the experimentations, particularity of the national context, and a short description of each Digital Atelier.

KEYWORDS

**NATIONAL
EXPERIMENTATIONS**

SYNTHESIS BY COUNTRY

DIGITAL ATELIERS

SHORT DESCRIPTION

**NUMBER OF
PARTICIPANTS**

The experimentation of the 40 Digital Ateliers **APP YOUR SCHOOL** Project was made throughout the school year 2017/2018 and involved a total of 960 Students and 58 teachers and educators. Each partner experimented 5 Digital Ateliers that was carried out with students aged 11 - 16. Each Digital Atelier stands alone and has 6 hours duration and objectives, so that teachers, trainers or educators can use various atelier by combining them in different ways according to their curriculum objectives. The Digital Ateliers focus in general 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.

Each national context posed different needs and experimentation situations which were dependent on the difference of the national curricula contexts, available equipment in school, learning approaches, etc., which we will illustrate in the following with the synthesis of all Digital Ateliers by country.

In some countries the focus was on the testing and implementing of the methodology of the project (Italy, Poland, Czech Republic, Greece, Lithuania), in some countries the focus was on the introduction of apps and new software in the school curriculum in a creative way (Turkey, Finland, Portugal).

CZECH REPUBLIC

Digital Ateliers (DAs) implemented in the Czech Republic were oriented towards art education and gallery pedagogy and their crossovers to several fields: biology, ecology, and the environment, photography, literature, and linguistics. These DAs can successfully develop many types of literacy of children, pupils and students: visual, digital, media, literary and emotional literacy. They can also develop communication skills and key core competencies.

DAs met the specified parameters - especially in regards to the involvement and use of Bruno Munari and Alberto Manzi's methodology - mainly in the form of a combination of the use of classical art with the involvement of new media. The use of mobile apps has also been applied in a variety of ways. Individual applications have become a tool of knowledge and source of inspiration, a means of altering the visual aspect of an existing theme and also a key tool for creating a whole new image. At the same time, the concepts of all 5 ateliers were trying to keep up with the availability aspect - that is, working with materials and technologies that are financially and universally accessible to as many schools as possible.

Two DAs were realized at the Elementary Art School Music Art. Elementary art schools are the type of schools that are a specific part of the Czech educational system (arts education). It is a world-unique network of schools in the Czech Republic and Slovakia that provide the basis of education in several artistic disciplines: musical, artistic, dance and literary-dramatic. For the implementation of the DA there are ideal conditions (compared to classical schools) - it is mainly the possibility of sufficient time subsidy and better background (specialized classes with better material and technical equipment).

The second part of the ateliers was realized by the education department of the Prague City Gallery - an important Czech gallery (administered by the Prague City Hall), which focuses on modern and contemporary Czech art (20th and 21st centuries). Thanks to its orientation towards progressive art, the gallery provides space for the realization of educational activities with transitions to other disciplines, which is, among other things, a significant tendency in contemporary art. As in the above-mentioned elementary art school, there was also the ideal background for workshops - in this case in the equipped educational centre with a studio and a reading room. Most of the activities were realized in the interior / classroom, studio /, but some activities were carried out outdoors.

All 5 DAs motivated pupils and students to absorb important topics in an entertaining and attractive way. The concept of all DAs reflects new trends in art education and in education in general: interdisciplinary (intersection of art education with other disciplines, interconnection of disciplines, project teaching), intermediality (interconnection of media - i.e. classical art / print, painting, etc. / with new media), interactivity (mutual interaction of the work / object of knowledge / with viewer / student and pupil /, dialogue with art, entertaining and playful form, clarity, discussion ...). The main principles were mainly interpretation, imagination, inspiration, and reflection. The experimentation involved 90 students and 4 educators.

In the following pages a short summary of the 5 Digital Ateliers implemented in Czech Republic:.

SELF-PORTRAIT AND IDENTITY

KEY QUESTION

How can we express and portray our own unique soul, mind and various identity by a combination of the photo with text and by using different art styles to demonstrate the diversity of society?

This DA was focused on self-reflection in the context of society's perception. The main theme was the expression of one's own identity by linking the photo and text through a variety of styles. One of the key goals was to find out that each person is an original, irreplaceable and unique personality that has its own style, thoughts, soul, character, faith, values, and so on.

INSPIRATION

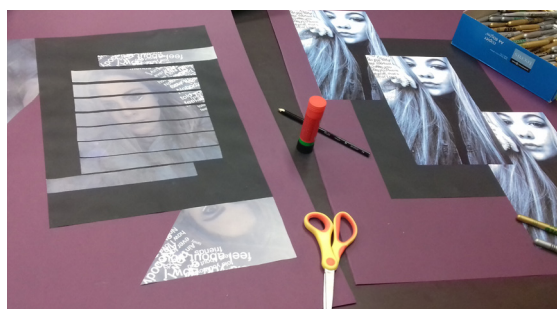
Visual poetry, lettrism, street art and graffiti, calligraphy, typography, graphic design, virtual reality, etc.

GOALS

- To understand concepts such as identity, diversity, society, tolerance, coexistence
- To test relationships between image (photo) and text (words and letters)
- To creatively and effectively implement new media in teaching and gallery education
- To express identity not only through a photo (formal, visual plane) but also by a text (content, meaning plane)
- To learn to be tolerant (awareness of the value and uniqueness of each person)
- To develop visual, literary, media, digital and emotional literacy, to develop communication skills
- To inform about the positive and negative (pitfalls) of new media and social networks



www.vimeo.com/296418660



IN THE OCEAN

KEY QUESTION

How big is the impact of contemporary human civilization and its behavior on the change of ocean environment?

Using interactive educational applications, pupils looked at and gained information about marine life, which was the starting point for their own marine life paintings and artwork, first in the form of study paintings and then the fantastic digital painting of a deep-sea creature that was eventually revived with a short video. They were then tasked to pollute their paintings with plastic rubbish, which opened up the debate on the impact of pollution on the ocean environment. This escalated the next task, where pupils were supposed to cook out of garbage and make a short film reflecting the acquired knowledge and their attitude towards this global problem.

INSPIRATION

Marine life, deep-sea animals, big waste stain, film Plastic Ocean

GOALS

- to develop global thinking, contextual thinking
- to gain more knowledge about the diversity of species, its living
- Conditions and plastic pollution
- to use intermediality - mixing classic art techniques with digital ones
- object creation with graphic design, computer drawing with performing,
- object creation with the movie
- to use experimental way of using smartphone, tablets



www.vimeo.com/296418437



MAPPING OF THE RADOTIN LANDSCAPE – EXPERIMENTAL HERBAL

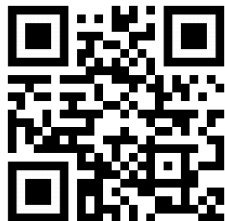
KEY QUESTION

Do you know landscape around your hometown?

The aim of the Digital Atelier was the synthesis between the world of new media and the real space of the landscape, as well as the synthesis between the systematic study work and the creative flow of the artistic process.

INSPIRATION

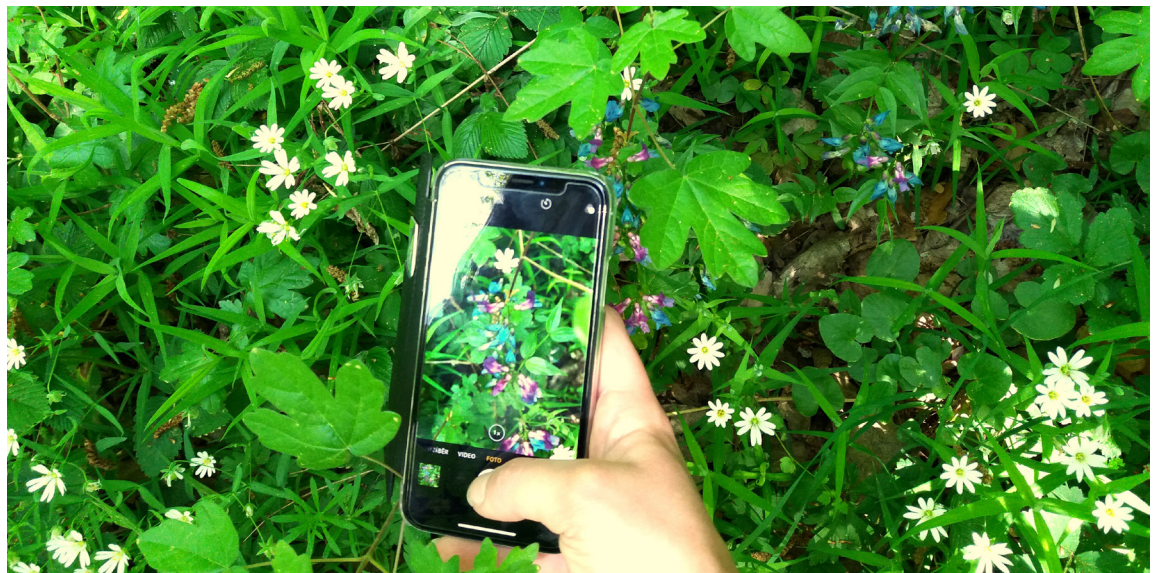
Students, along with teachers, made a journey through the countryside. During the trip, they took photos of the most diverse species of vegetation. The mobile application Plantnet was used to identify individual plants. Then the students individually searched for further information about the plants (e.g. curative effects, toxicity, growth process, inflorescence type, fruit properties, nature of the occurrence, botanical name, utilization, etc.). This information served as an inspirational source for subsequent creative work. Each of the students created their own work, which, together with the other students, consisted of a set of paintings - a collective experimental herbarium.



www.vimeo.com/296418543

GOALS

- To get familiar with Plantnet, to learn how to use it for study and personal growth, and to gain knowledge about unknown plants
- To understand the contexts of Czech culture (e.g. the Czech national anthem as a description of the landscape, Bohuslav Balbín's literary work "diversity" in which he depicted the Czech landscape as a rosette) and acquaint with selected authors of the Czech and European art scene (Milos Sejn, Marian Palla, Franz Skale, Wolfgang Laib)
- To use creative insights to learn about art history, botany, and your own memories
- To develop visual imagination - the student should be able to create a new original visual communication based on the acquired knowledge
- To apply study, experimental or creative approach to a creation process
- To use a wide range of classic art techniques and technologies to create a work
- To find subjective sensitivity and relationship to the landscape
- To perceive the value and history of the place where the student lives



PHOTOGRAPHIC STYLIZATION – OLD PHOTOS IN OUR AGE.

KEY QUESTION

How can we connect history and present through media of photography and handmade creation of props and costumes?

The Digital Atelier was focused on photographic stylization. Participants have creatively used their smart mobile phones or tablets with a photo editing application to capture and edit a photo that is as close as possible to the original black and white historical photo. During the photographic process, they themselves stylized into the characters depicted. During the realization of the digital studio, they learned a lot of interesting information about the original analogue technology of photography and compared the positives and negatives with the current digital technologies. The original historical photo (about specific events or celebrities) searched for more information through internet search engines. An important part of the process of realizing the atelier was also the manual production of props and costumes.



www.vimeo.com/296418618

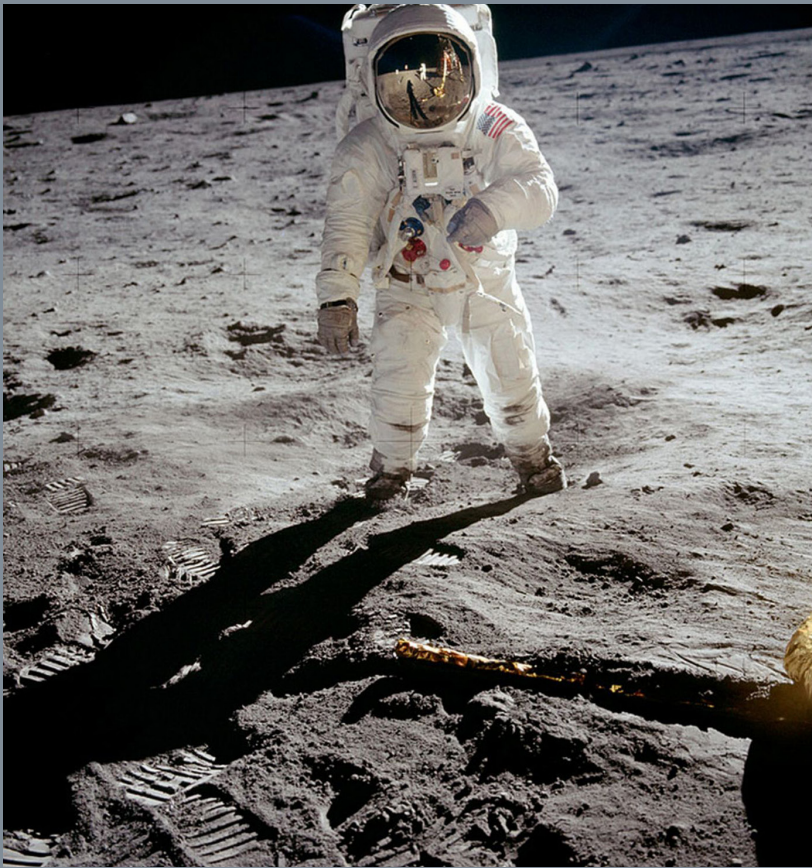
INSPIRATION

Interesting historical photographs from different periods of history capturing human figures - often known or important personalities (artists, actors, singers, politicians, and ordinary people). Another development was the development of photography from its beginnings to the present.

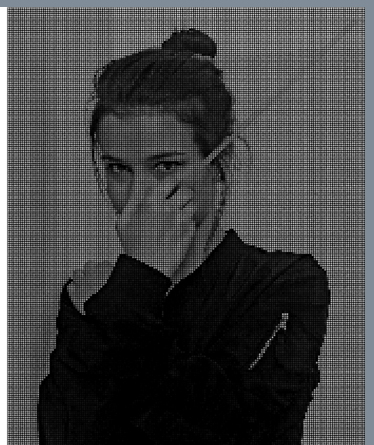
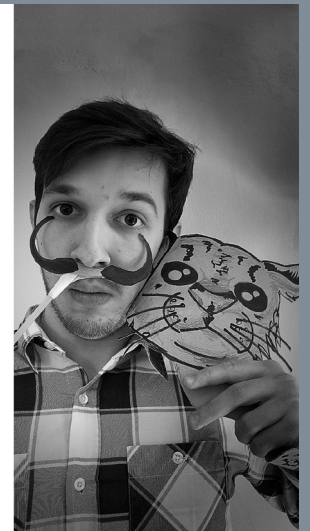
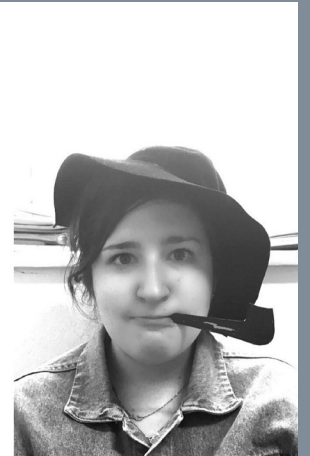
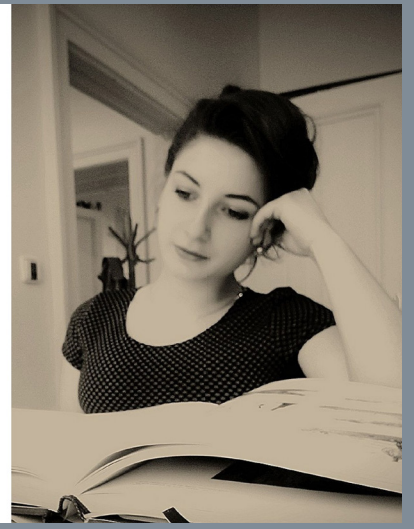
GOALS

- To work meaningfully and creatively with mobile apps
- To engage also the handmade creation
- To be able to search for information on the internet
- To understand the old techniques of photography and compare with contemporary digital media
- To work together and improve communication
- To develop visual and media literacy





**PHOTOGRAPHIC STYLIZATION
- OLD PHOTOS IN OUR AGE.**



A Digital Atelier from Czech Republic

DIFFERENT VISION OF URBAN SPACE

KEY QUESTION

How various can the visual perception of open urban space be?

This Digital Atelier has dealt with the issue of diverse vision based on the biological diversity of the species. The sight is the sense through which one perceives about 80% of the information and is therefore considered to be the most important for us. Through our own vision, we compose an image of the world in which we live. We create for us an authentic form that is constructed by the specific physiology of the human eye, but also the individuality of each of us, not only at the biological but also psychosocial and cultural level. However, this privileged position of sight does not necessarily apply to other species, notwithstanding that the form of what is seen is often very different. Digital Atelier different vision; introduced an attractive form of vision (Room Obscura), followed by traditional techniques (eye painting) and multimedia techniques (edited photographs and videos imitating the view of the selected animal) gave space to explore the world with the eyes of the animals. The studio was related to one specific public place that pupils know well and where they live beside certain species of animals. It should lead to the realization that as we see the world / specific space is just one of many possible versions. Through their

own works and experiments, pupils have the opportunity to inspect and better understand not only the vision and life of animal neighbours but also the individual experience of each of us.

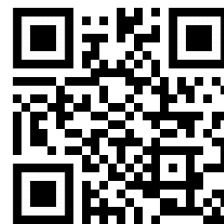
BENEFIT

Using cell phones and commonly available applications to simulate animal vision and thus gain a closer look at the different possibilities of seeing the world through experimentation.

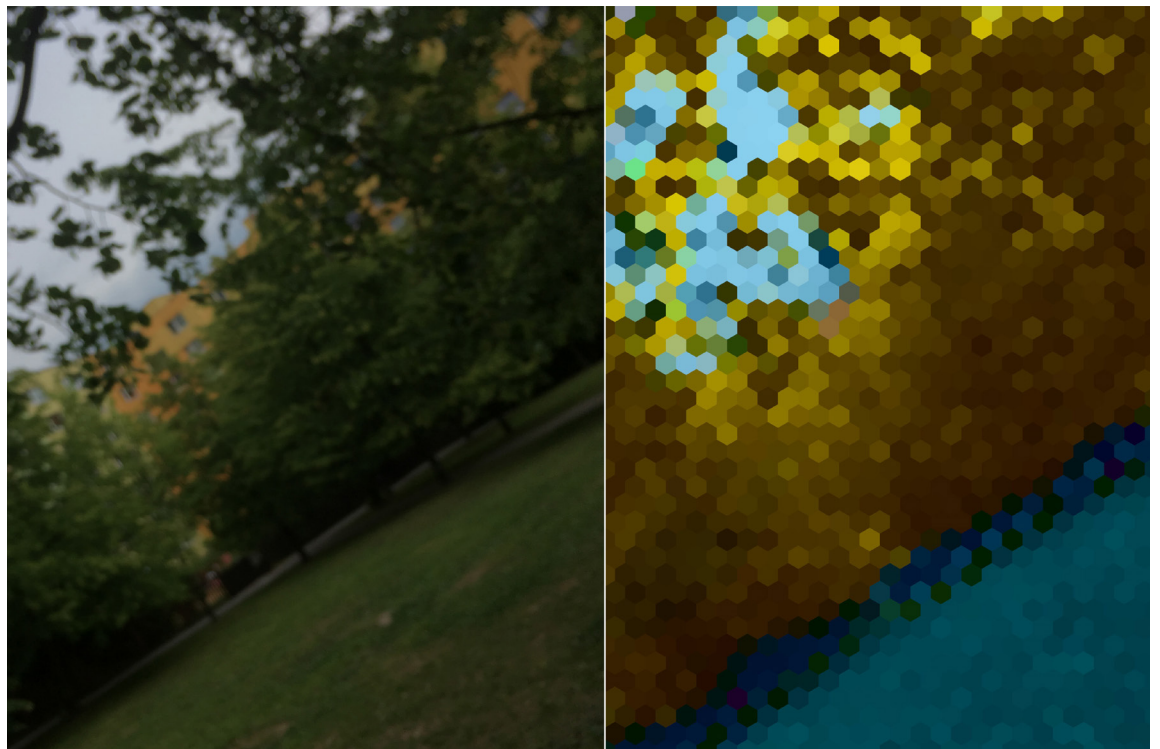
Inspiration: eye evolution in different species and their way of vision

GOALS

- To implement creative and effective digital technologies in education
- To introduce pupils to the principles of vision and optics
- To explore the variety of eyes and their mechanism
- To get experience how different visions/ perceptions of public space can be
- To expand knowledge of the animals living with us in the neighbourhood
- To development of empathy and tolerance
- To recognize the possibilities of photography and its manipulation
- To use of mobile phone and tablet as a tool for discovering the world around us



www.vimeo.com/296418354



FINLAND

The Finnish team executed the five Digital Atelier experimentations collaboratively among the consortium partners: City of Kuopio's Education Department, two schools of the city of Kuopio (Nilsia upper secondary school and Juankoski upper secondary school) and Savonia University of Applied Sciences. Altogether 75 students participated to the Digital Atelier experimentations and two teachers, one peer assistant teacher/student and two experts of Savonia University of Applied Sciences guided them. A special aspect of the Finnish experimentation was that the Digital Ateliers were executed in two schools, which are situated in the countryside area of the city of Kuopio, which is the ninth biggest city in Finland. Through this the education department of Kuopio wanted to boost the access to the novel educational innovations in the countryside areas of the city as well as improve the status of the students and teachers who are situated far away from the more populated areas. The five Digital Ateliers have had an impressive impact in the two countryside schools and their students and teachers. The schools have had the opportunity to experiment new pedagogical methods, which combine creativity and technology.

In the following pages a short summary of the 5 Digital Ateliers implemented in Finland.

SEPPO.IO

KEY QUESTION

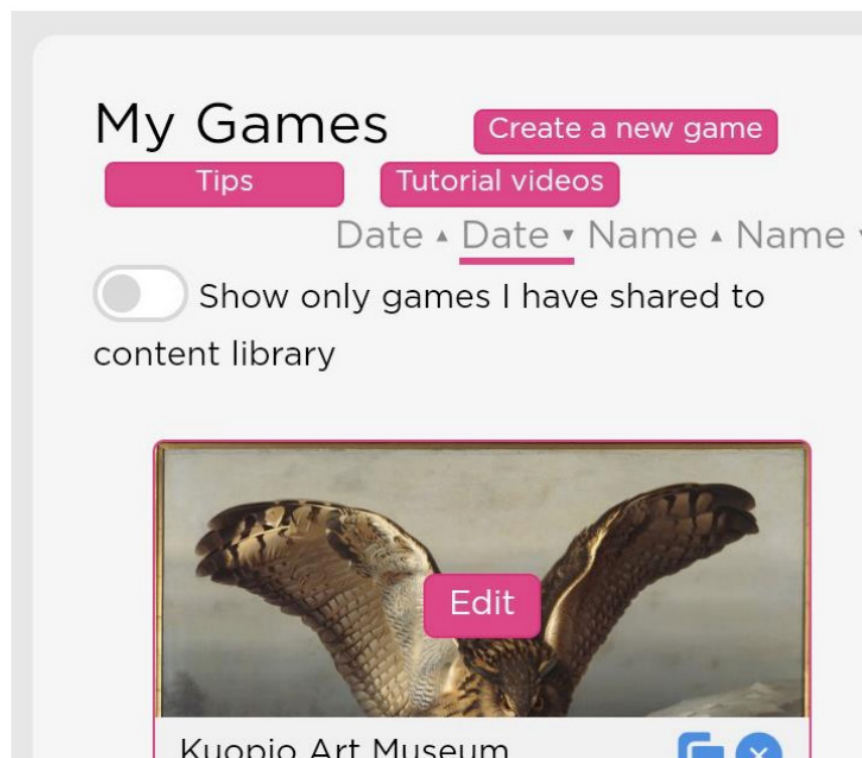
How can we enhance learning process need with developing serious and learning games?

The aim of the experimentation was to combine art and technology in an interesting, creative and motivating way taking into consideration the 21st century skills and the new curriculum in Finland. Seppo.io is a platform and a new way of learning. It combines experiential, project-based learning and utilizing technology in a real-life environment. The objective of playing Seppo.io game was to improve students' 21st century skills, such as problem solving, creativity, teamwork and sharing your know-how. Seppo's game pedagogy is to teach in a way that inspires and motivates students. It gets players on the move, which also makes the brain work better. City of Kuopio and Nilsia upper secondary school have a license of Seppo.io at all the schools in Kuopio but the application and the license are quite recent and we wanted to activate the use of the platform through this Digital Atelier experiment. The Finnish team organised this Digital Atelier experimentation in collaboration with the two consortium partners, Savonia University of Applied Sciences and the City of Kuopio and its Nilsia upper secondary school. Savonia University of Applied Sciences prepared the lessons in collaboration with the English language teacher and they were put into practice at Nilsia upper secondary school.

During the execution of the Digital Atelier experimentation the students played a game of Seppo.io prepared by the teacher of English language at Kuopio Art Museum. There were 10 open questions including pictures and text. Students were supposed to answer using text, sound or image or a combination of these. Students learned about traditional Finnish art of the Von Wright brothers who lived in Kuopio area and about the inspiration provided by Finnish nature in their art. After this the students made also retrospects of the traditional art and produced all the new artefacts as a game in the digital environment of Seppo.io. The game has been made public and is to be found at Seppo.io library under the name Kuopio Art Museum. The students learned about the pedagogy of Bruno Munari and Alberto Manzi during the experimentation, e.g. preferring action to words, visuality and the acceptance of mistakes. In addition, both the students and the teacher felt like artists in this experimentation.



www.vimeo.com/273654281



My Games Create a new game

Tips Tutorial videos

Date ▲ Date ▼ Name ▲ Name ▼

Show only games I have shared to content library

Edit

Kuopio Art Museum

USING KAHOOT AS A TOOL FOR ENGLISH LANGUAGE LEARNING

KEY QUESTION

How to use Kahoot.com in learning and revising English vocabulary and structures?

The objective of the experimentation was to develop teamwork and collaboration skills, to practice data mining and management, to share and acquire new information through using Kahoot questionnaires as a help to learn English language. The main goal was to revise and learn new vocabulary and structures in a fun way using interactive quizzes/games/discussions/surveys as format, to share new information, to develop teamwork skills, to utilize ICT in completing the tasks and sharing the results. The goal is also to study by using analogical and digital methods. In order to encourage civic engagement the students were encouraged to use different working environments, e.g. the public library. Each realisation of Kahoot included vocabulary, expressions and structures from a different topic of the course book which required data mining and management as well as using computers and mobile devices with the other members of the team. The Digital Atelier as itself combined artistic, educational and recreative themes and approaches.



www.vimeo.com/309443285



STORYBIRD.COM AT MULTIDISCIPLINARY LEARNING OF ENGLISH LANGUAGE

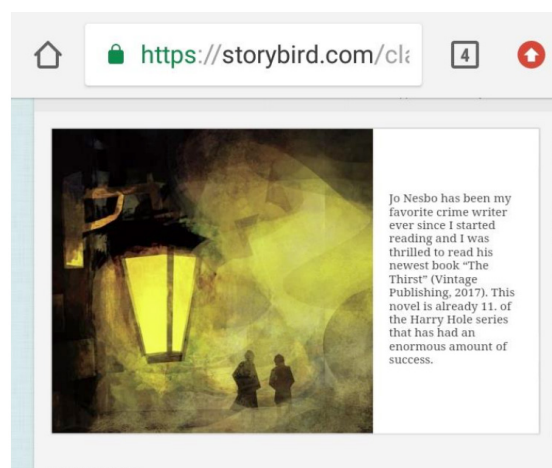
KEY QUESTION

How to use Storybird as a tool in creating a visualized book review?

The objective of the experimentation was to practice reading and writing skills in English, to develop presenting skills (both written and oral), to practice data mining and management, to enhance media literacy, to acquire, share and create new information through creativity of the students. The main goal of the DA was to encourage students in independent and self-guided learning process during which they read an original English novel of their choice and created a visual book review using the guidelines provided by the teacher. They were also encouraged to gain multidisciplinary knowledge about the author and the context of the era present in the novel, to share new information with their fellow students, to utilize ICT in completing the tasks and sharing the results. The DA combined English literature, writing a book review and the creation of a presentation applying Storybird.com and other sources of social and mass media. The Digital Atelier developed the students' individual, self-guided working skills, data mining and time management skills as well as artistic, reading, writing and presenting skills, as well as enhanced their media literacy skills and the ability to share and acquire new information.



www.vimeo.com/321495287



PADLET AT MULTIDISCIPLINARY LEARNING OF FINNISH LANGUAGE AND LITERATURE

KEY QUESTION

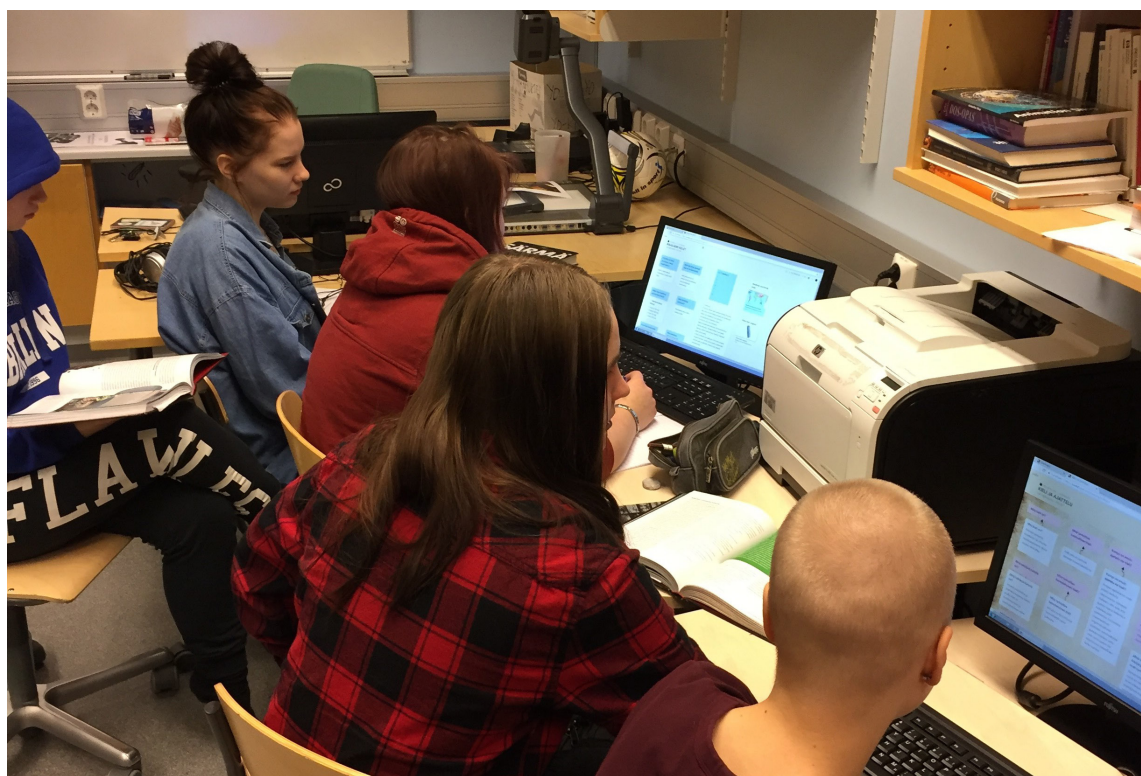
How to use Padlet as a platform in examining the special features of the Finnish language?

The objective of the experimentation was to experiment the use of Padlet at multidisciplinary learning of Finnish language and literature. In addition to Padlet the students used Movie Maker and Photo Director as applications in the experimentation. Furthermore, the Digital Atelier aimed to develop teamwork and collaboration skills of the students, to teach them data mining and management, to enhance media literacy and to share and acquire new information on our mother tongue and its structure and history. The main goal was to encourage the students in independent data acquisition related to Finnish language and its cognate languages and different dialects in Finland. In addition, students were guided how to share new information, to gain new knowledge about the subject in a creative manner, to develop teamwork skills, to utilize ICT in a varied way in completing the tasks and sharing the results. A visit into the local library and using padlet and own or school devices completed the task. Through

the Digital Atelier experimentation, the students' understanding of the link between Finnish language and thinking was improved and they became more aware of the importance of one's mother tongue in the context of the other languages of the world. The students had to make use of their creativity in various tasks using e.g. video, audio, visual and written sources. The Digital Atelier developed the students' teamwork and collaboration skills and taught them data mining and management, as well as enhanced students' media literacy and ability to share and acquire new information.



www.vimeo.com/261790217



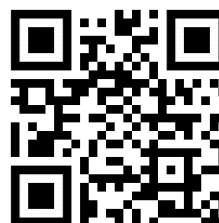
SOCRATIVE DIGITAL GALLERY

KEY QUESTION

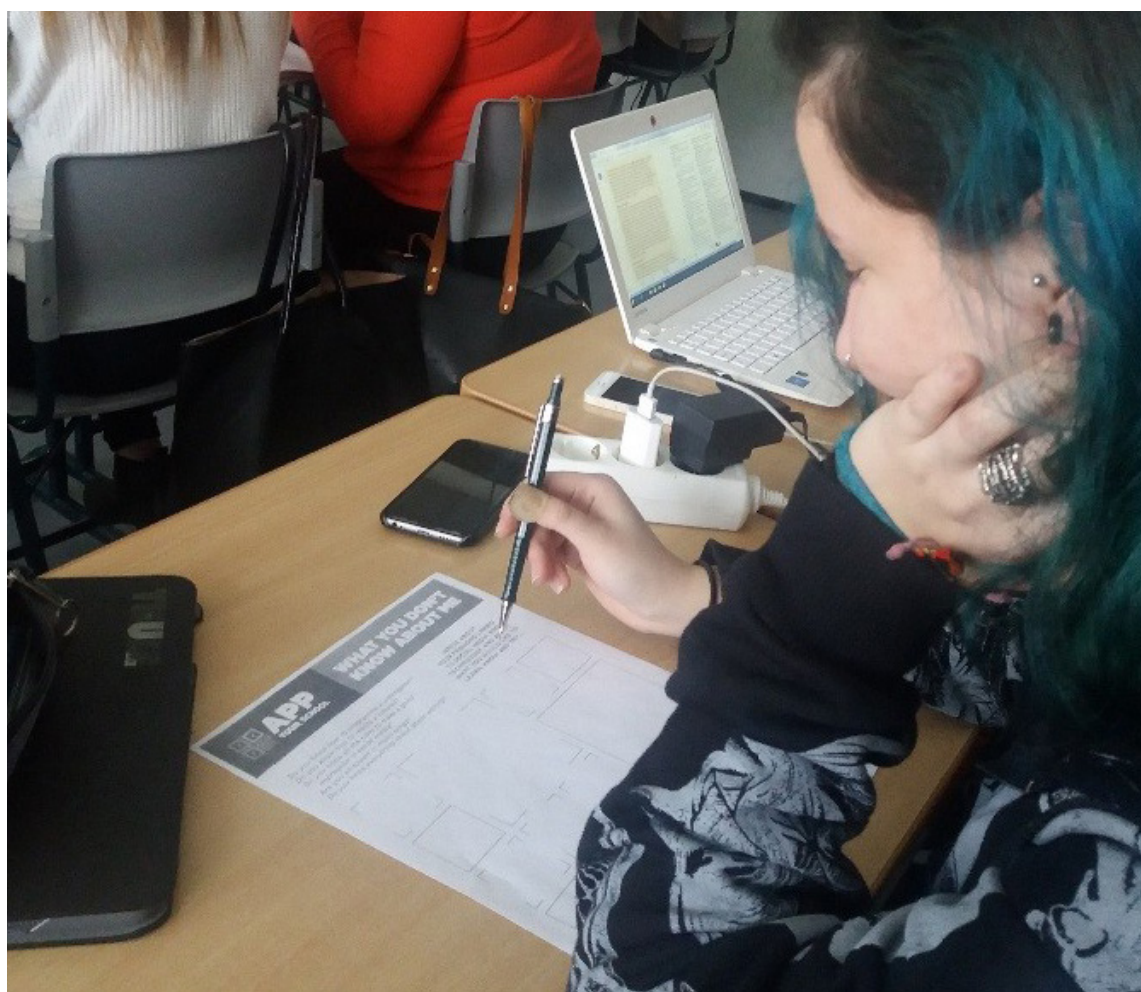
How we can enhance learning process need with developing serious and learning games?

The objective of the experimentation was to experiment the use of Socrative platform at learning English language and as a feedback tool for the students. The aim was to discover how learning process can be enhanced through an online study platform and learning games. The objective of Socrative Digital Atelier was to develop teamwork and collaboration skills of the students as well as teach them data mining and management, and enhance media literacy of the students while learning English language. The Finnish team organised this Digital Atelier experimentation in collaboration with the two consortium partners, Savonia University of Applied Sciences and the City of Kuopio and its Nilsia upper secondary school. Savonia University of Applied Sciences prepared the lessons and they were put into practice at Nilsia upper secondary school. The novel aspect of this Digital Atelier was the intensive use of peer learning because

the school had a Turkish exchange student as an instructor/teacher. The Socrative tool had been in use at her school in Turkey and she was an expert of it so she was given a possibility to instruct the other students showing them the basics of creating a test using the tool. The other students were very collaborative and receptive in their learning process. As an outcome, Socrative Digital Atelier developed students' teamwork and collaboration skills as well as taught them data mining and management and enhanced media literacy of the students while learning English language. Students were able to use their creativity in all the tasks and see the outcome of their work have a positive impact on studying which might hence prevent early school leaving.



www.vimeo.com/309443727



The Digital Ateliers (DAs) that we designed were all tested in schools. Specifically, we completed a pilot test for each atelier in a classroom of an average of 20 students, aged 12-15. The full DAs were tested in 5 schools and parts of them were tested in another 4, so approximately 200 students were reached and 11 teachers were involved.

The ateliers were implemented in subjects such as English, Ancient Greek, Modern Greek, Biology, ICT and a Project class with themes ranging from internet addiction to Aesop's fables. In all the ateliers we combined elements of technology and media. We tried to use technology in a level that would be interesting for the students, but at the same time will help the teachers develop their confidence in technology. We took into consideration the way teenagers use technology, what they do with it, their passions. At the same time we used technology as a means to an end, as a tool; a tool to investigate, simulate and create. While designing the ateliers, one of the most important factors was the fact that we wanted the ateliers to become tools for greek teachers to use in class. This meant that we had to work around very specific constraints such as the 45 minutes class time, the strict time frame for completion of the annual curriculum and the large number of students in a classroom.

Our main goal was for the DAs to be concise and flexible. That is why we designed each atelier to have the following three stages: 1. experimentation with the technology/medium, 2. development and 3. further development.

Each stage starts with a question in order to intrigue and initiate the investigation. The three different stages work like three levels through which the students go deeper and deeper into the exploration of the initial question, a methodology that mirrors the two pedagogical approaches of the project: Alberto Manzi and Bruno Munari. The stages are in sequel, but they also work autonomously. Each stage is completed in two 45 minutes sessions (a whole atelier is completed in six 45 minutes sessions). Therefore, teachers can choose to complete as many stages as they can depending on their available time. Furthermore, each atelier is designed so that the educators can implement their own theme, directly relating the atelier to the subject that they teach at a particular time: all the greek ateliers can be applied to almost every subject area of the curriculum. Additionally, another two factors were taken into consideration in order for the DAs to be implemented in the reality of the greek school. First of all, the lack of technical equipment. In recent years there are efforts made by the ministry of education to equip schools with new ICT equipment, however the reality is that there are still schools that lack the resources. Thus, our ateliers are designed to work with basic technical equipment and working in groups allows sharing what's available.

Having said that, during the testing period of our ateliers, we found out that whoever is willing always finds a way: in one of our pilot ateliers where the students had to use an online application on their phones, we were pleasantly surprised to see an eager teacher creating a hot-spot with his own device to overcome the fact that his school had no wi-fi! Finally, another important factor was that as of the academic year of 2018-2019 the Greek Ministry of Education has given a direct order for banning the usage of mobile phones in schools. That meant that students' most favorite technological tool could not be used in the ateliers and that is why we looked into

providing alternative options (for example the use of specific online platforms instead of apps).

Two out of the five digital ateliers that we designed (*QR codes* and *Soundscapes*) were tested in our partner school, 1st Gymnasium of Ymittos. After the completion of the ateliers, the involved teachers organized an open day for the APPYOS project. Under the supervision of one teacher, the students that took part in the ateliers helped to transform one of their classes into an exhibition space. During a whole day visitors came in turns from other classes and explored the exhibition. The students guided the visitors explaining the process and the aim of the project. They urged their fellow students to interact with the exhibits: reading the qr codes from their original posters and listening to the soundscapes while comparing with the original texts that inspired the recordings. In addition, several students were encouraged by us to document the whole event with photographs, interviews and video. This participatory small exhibition was a novelty in this school as it proved a collaborative process and way to become visible, creating an impact in the local community (in this occasion it was the school).

In the following pages a short summary of the 5 Digital Ateliers implemented in Greece.

SOUNDSCAPES

KEY QUESTION

Can we tell a story through sounds exclusively?

OBJECTIVES

- Research a theme;
- Observe, analyse;
- Structure content for a time based medium
- Recognise and develop a narrative
- Experiment
- Develop communication and organizational skills within the group.

The aim of this DA was to create a story exclusively with sounds. After a group brainstorming about the sound profile of a location or a short narrative, students make lists and draw a self-made music sheet, organising sounds on a timeline, their levels and sequence.

Roles are shared within the team as in an orchestra. They rehearse and record their performance for the peer audience. Similarly, they do this with digital devices by searching in sound libraries to create the desired storyline. This performance uses the devices' speakers as music instruments. Additionally, they can visit the actual space and record and edit a documentary soundscape afterwards.



www.vimeo.com/321186595



QR CODES

KEY QUESTION

How can I hide information and create a campaign?

OBJECTIVES

- to use technology (in this case qr codes) creatively
- to learn how to combine different media
- to combine different aspects of reality (digital and analogue)
- to experiment with visual communication using elements of surprise
- to create an engaging campagne on a specific topic.

The students get to know and experiment with qr codes. Then, in teams they create content on a specific theme using video, image, sound and text and they generate their own qr codes in order to 'hide' their content. Finally, they combine their QR Codes with other visual elements in order to create an engaging poster. All the teams' posters constitute a campaign on the specific subject.

The basis of this activity is the gamification of learning. Students are being engaged in hiding and seeking/revealing information using qr codes. They have to collaborate, to think creatively, to test and evaluate, to present their work and create engagement.



www.vimeo.com/269603866



TRUTH OR DARE

KEY QUESTION

How easy is it to become a fake news victim? Can I build and share my own news campaign through media?

OBJECTIVES

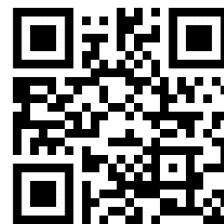
- Introduction to the recent concept of "fake news" in the digital world of information.
- Experimentation with visual communication tools, such poster creation or short interviews.
- Experimentation with social media writing and post creation.
- Social media openness and validity problems, misinformation and solutions.

Build your own student campaign, even if it is based on a fake news. How easy is to create content through the web? Create your campaign using 3 technology tools:

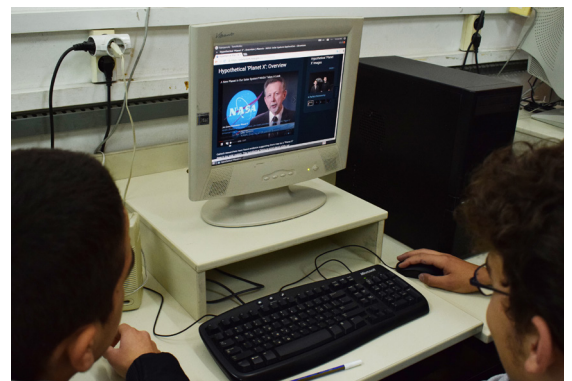
1. Social Media writing and post
2. Poster creation
3. Video proof-interviews

Students work in groups of 4 and at the end vote on which campaign tells a true story and which lies. Regardless of the original validity of the story or piece of news (it may be truth or fake), the winning campaigns are the ones that made it look real and convincing. How easy is to get fake news victims? How can we protect ourselves?

Students are encouraged to discuss the easiness for someone to create content across the various new media and communication channels, based on their personal experiences. In addition, they are encouraged to negotiate the concept of misinformation and to propose ways of dealing with it.



www.vimeo.com/297729550



INFOGRAPHICS

KEY QUESTION

Can information and knowledge be presented in a visual way in order to become more understandable and memorable by a wider audience?

OBJECTIVES

- to investigate verbal and visual abstraction
- to investigate the relation between verbal and visual communication
- to experiment with the visualisation of information
- to be able to create an infographic.

Students experiment with verbal and visual abstraction. They are introduced to the concept of symbols and they create their own. They study how verbal and visual communication (text and symbols) can be combined to create a visual representation of a set of information. Finally, they create their own infographic in order to communicate a set of information/knowledge in a quick and easy way



www.vimeo.com/260303655



ONE IDEA, MANY VARIATIONS

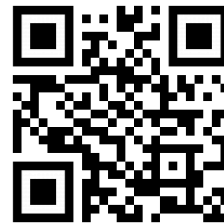
KEY QUESTION

How can an object or concept be visualized in different ways?

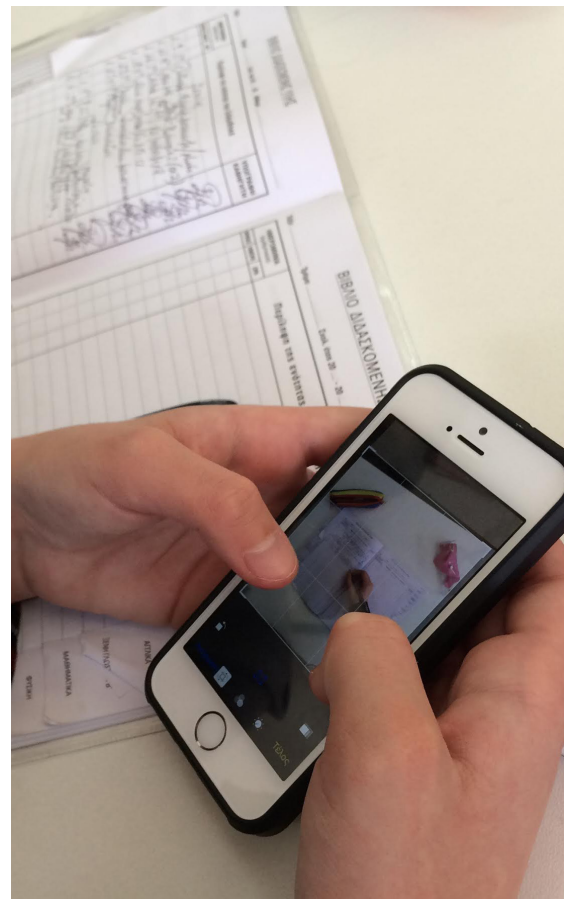
OBJECTIVE

To investigate the subjectivity of the message hidden in a photograph, photo-collage or a video.

Students photograph a selected object or idea in 5 different ways related to 5 specific conditions: reality, surreal use, advertising, fairy tale and social interaction. Then, based on the same theme, they create a digital collage with min 5 new photos, trying to portray the idea in a synthetic visual way. Finally, they develop this concept into video, selecting one of the different types of video: reportage interview, documentary with personal narrative, fiction, no sound video with titles (as for social networks), advertisement). Text can be added and applied in all stages to enhance or twist the meaning of the picture.



www.vimeo.com/307678607





QR CODES

A Digital Atelier from Greece



ONE IDEA, MANY VARIATIONS

A Digital Atelier from Greece

The experimentation of the **APP YOUR SCHOOL** project, implemented by the Zaffiria Center, involved the Rocca dei Bentivoglio Foundation and the secondary schools of the Union of Municipalities of Valsamoggia. The experimentation lasted for the entire school year of 2017/2018 and involved 15 teachers and 200 students.

In the Italian case, the design was as faithful as possible to the design and pedagogical approach of Alberto Manzi and Bruno Munari. The work was set up starting from engaging and attractive questions that made the students want to get to work to understand, try and undo. Individual and collective work has been stimulated in every phase. The teacher never gave direct and conclusive explanations but created the conditions so that the students could explore independently, look for their answers, change their mind or working method if necessary.

In all DAs, being able to do, experiment, ask questions, exchange ideas, build with your own hands has been fundamental to the success of the pedagogical paths.

The main effort was made at the technological level: what could distinguish these DA from other technological experiments? Probably breaking the rules of allegedly correct use of a technology, to start writing a new instruction booklet.

Being artisans, designers and poets (but also artists and engineers) at the same time was the key to living and using technology in a less consumerist, discounted, repetitive and stereotyped way.

A lot of attention has been given to ensure that the work was beautiful and cared for, so that the students could live an aesthetic experience, feel able to reproduce and redesign it.

The goal of the shared planning was to bring out as much as possible the educational value of the participation of boys and girls in the life of the territory, rethinking technology as an instrument for creativity and authorship.

All Digital Ateliers have in fact led to public initiatives, to rethink and re-imagine their territory, to create a new service for libraries.

In the following pages a short summary of the 7 Digital Ateliers implemented in Italy.

AR FOR STORYTELLING

KEY QUESTIONS

- How to "increase the reality" of own school and local community?
- Why, when, which is the purpose of adding content to reality? Does diminished reality exist?
- How do you design and project with technology as augmented reality?

OBJECTIVE

Understand and handle a tool like AR in a creative way, developing a community project.

The Digital Atelier tries to explore augmented reality inspired by the creative and poetic uses of technology by some artists, such as Julie Stephen Cheng, who have been able to reconcile manual and technological aspects to create stories capable of emotion.

In the Digital Atelier the students investigate:

- How many ways are there to increase reality (from artists working with acetates, to window games, to video mapping)?
- What is the meaning of this operation? Does adding to reality improve the experience? How do I delete it: does "diminished reality" exist?
- How can a story be created? Examples from Julie S. Cheng, Uramado Exhibition and other artists.
- Design stories using paper art, animated drawings (iStopmotion) and AR

At the end of the DA the students realized a collective exhibition with the collaboration of Rocca dei Bentivoglio Foundation.



www.vimeo.com/252121976



COLOR MATCHING: LANDSCAPE'S COLORS AND SOUNDS

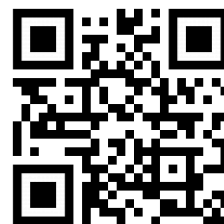
KEY QUESTIONS

- What color has a sound?
- How does a color sound?

OBJECTIVES

- investigate colors and sounds of the student's territory using technology to code new meanings;
- explore the "already known" in a new and different way, to design a new sensory experience thanks to technology.

Color matching is the process of transferring a particular color across different technologies or platforms. In our Digital Atelier, color was transferred from the students' living environment to an abstract support (for example cubes made with boxes), and re-contextualized thanks to the combination of recorded sounds. Colors that risk getting lost in the environment because remain often "unobserved" become the theme of a playful installation in which cubes of different sizes can be used to build precarious architectures, like in a gigantic construction game. Thanks to the qrcode, the cubes become sound and the noises and sounds of the environment "enter" in the installation. The final installation was designed for a cultural institution of the city, the Rocca di Bentivoglio Foundation, to give space to the creativity of teenagers and at the same time to "look" at their own landscape with other eyes.



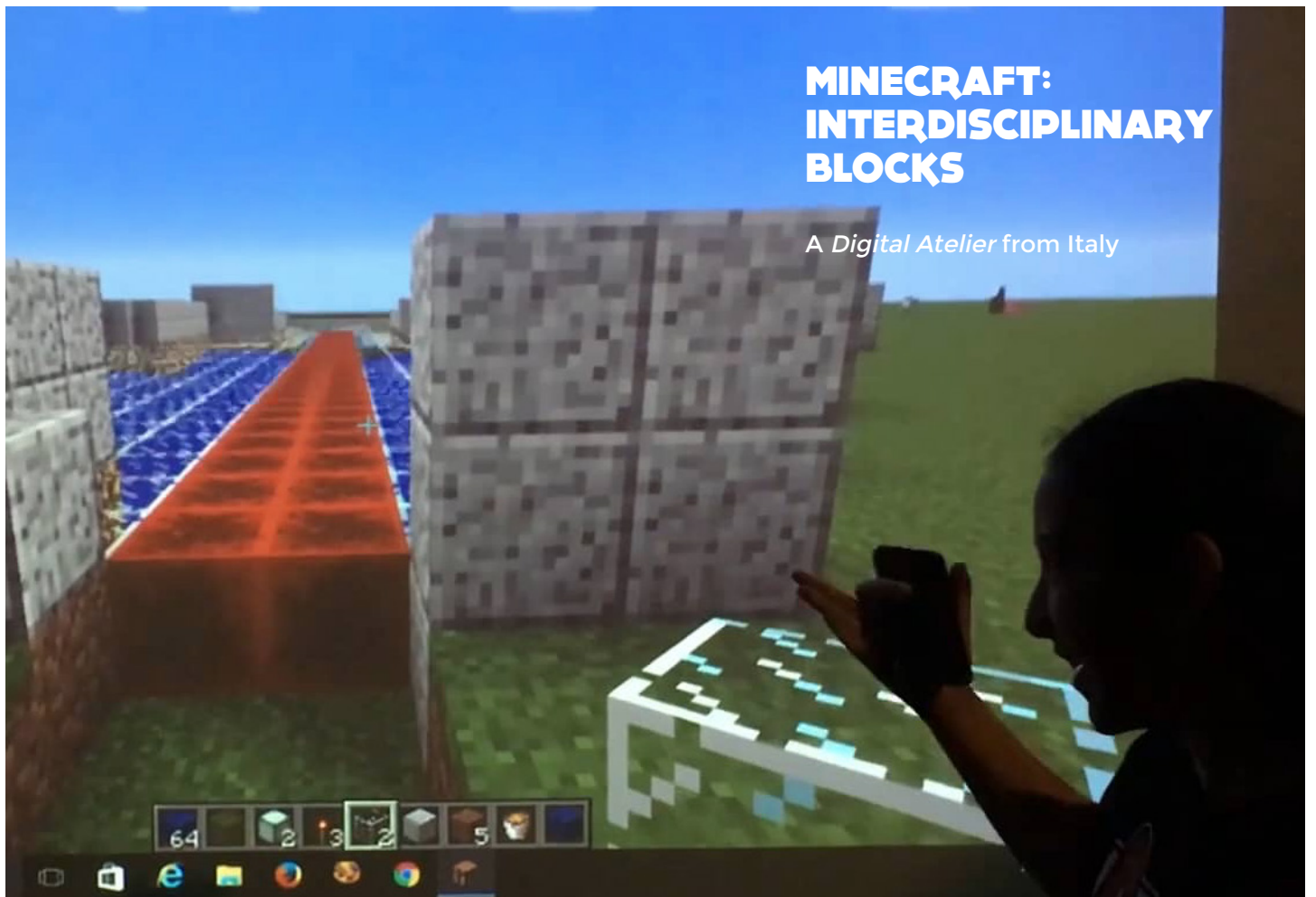
www.vimeo.com/256066451





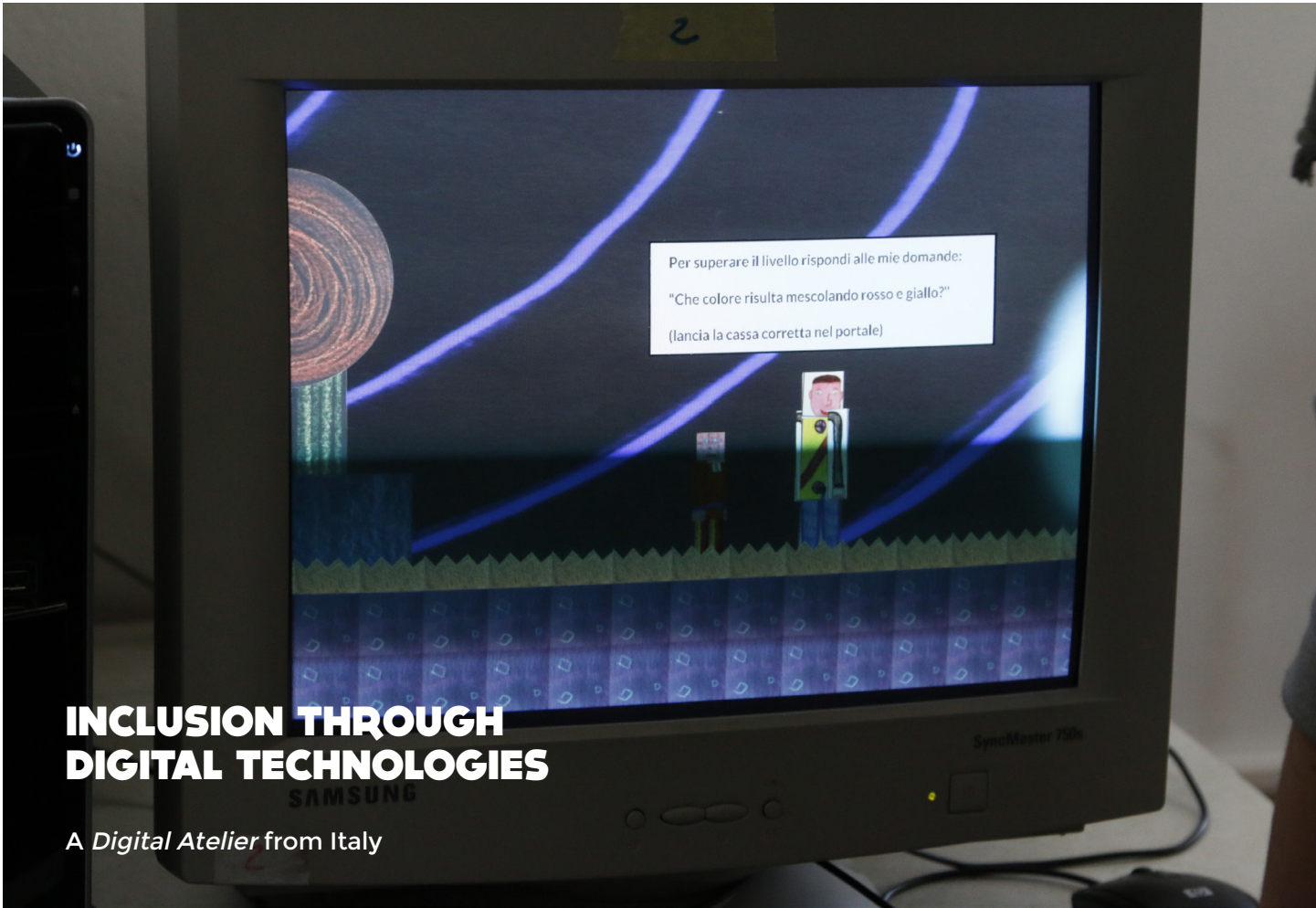
AR FOR STORYTELLING

A Digital Atelier from Italy



MINECRAFT: INTERDISCIPLINARY BLOCKS

A Digital Atelier from Italy



HOW DOES YOUR TERRITORY SOUND? DESIGNING SOUNDSCAPES

KEY QUESTIONS

- How does your territory sound?
- What emotions and feelings do you remember from a sound?
- How to become a designer of a soundscape?

OBJECTIVES

- know how to read, write and interact with a soundscape;
- know how to use technology in a creative and relevant way related to the landscape;
- be able to narrate starting from the landscape;
- integrate visual and auditory languages;
- know how to create a sound repertoire.

The aim of this Digital Atelier was to make students work on the theme of landscape and technology, integrating also the use of scratch and makey makey. The goal was to create a landscape with recycled materials (a second one has been designed entirely with paper and carving) able to take in the recorded sound repertoire, which was cataloged and designed by the students. The work of reconstruction of the landscape allows to investigate the structure of the territory: areas with different vocations (for example residential or productive), natural spaces (for example the management of the water cycle) force the students to find a coherence in the planning, to recognize and respect the rules while organizing their personal sound landscape.



www.vimeo.com/256076116



¹
It is possible to request the executive files at info@zaffiria.it

INCLUSION THROUGH DIGITAL TECHNOLOGIES

KEY QUESTION

How many different skills do you need to create a video game?

OBJECTIVES

- Explore students' gaming passions to find new paths for the inclusion of students with disabilities
- Encourage teamwork and the integration of disabled students
- Give value to students' interests, skills and creativity
- Use the video game also as a tool for verifying the school subjects

Students worked in groups and following different steps created their videogame starting from a pre-programming developed ad hoc by Zaffiria¹ with the name PlatformCraft. Using some models on paper, the settings and characters of the videogame are first designed, drawn and then colored. Afterwards the elements of the videogame are digitized (using gimp or similar programs for photographic cutout), the sounds are recorded and a series of multiple choice quizzes are created, the topics of the quizzes can be linked to the curriculum disciplines. At the end students can play together or have others play with their first craft videogame.



www.vimeo.com/261480622



MINECRAFT: INTERDISCIPLINARY BLOCKS

KEY QUESTION

Is it possible to activate interdisciplinary connection paths through the videogame?

OBJECTIVES

- Promote interdisciplinary paths between technological and artistic subjects
- Promote teamwork
- Promote the ability to design three-dimensional spaces
- Promote presentation skills

The proposal was to start from their extracurricular passion (generalizable in the passion for video games) to design new cultural spaces for the community. Starting from a historical-artistic study, students chose works of art, currents and artistic movements as a basis to design a new artistic-cultural space, as future's designers. These new places of culture and art were displayed thanks to three dimensional work using Minecraft, which was also explored and questioned, to better understand how it works and what kind of relationship we have with technology.



www.vimeo.com/266278691



²
This Digital Atelier has been implemented by the Rocca di Bentivoglio Foundation thanks to the Cultural Heritage Institute of Emilia-Romagna, which has supported it among the most deserving ideas in the context of the call *I love cultural heritage*.

QR STORIES

KEY QUESTIONS

- How much wonder can be hidden in a code?
- Designer in the library: how to create a new public service made by teenagers?

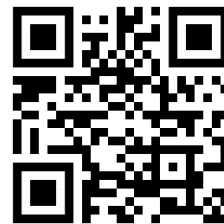
The Digital Atelier² consists in two main steps:

First step

The discovery of the QRcodes in which the detail of an image is hidden: an A3 sheet is given to the students, some black pens to draw around the cell phone to complete the illustration; the new images become micro-stories contained in micro-videos and combined with new QRcodes: compose your story by mixing the QRcodes.

Second Step

The creation of more complex stories: starting from the favorite book, borrowed from the municipal library, prepare the trailer, upload it to the youtube channel of the library and generate the Qrcode to paste it in the back cover: "Are in doubt about the chosen book? Look at the book trailer made by a teenager like you."



www.vimeo.com/267261528



SEARCH MYSELF ON THE WEB

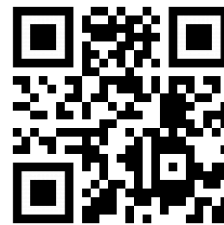
KEY QUESTION

How to find new images and words to tell about yourself through technology?

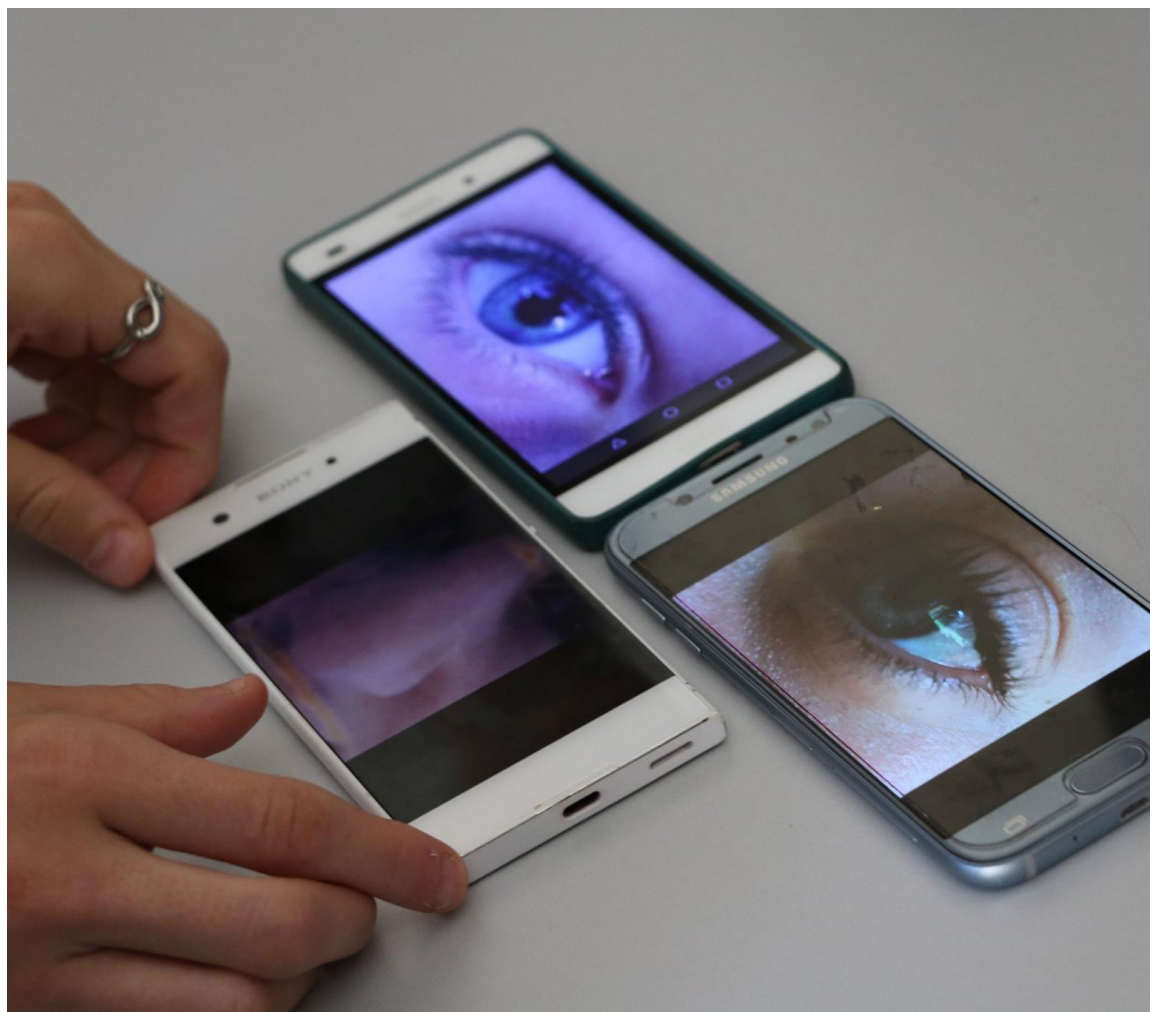
OBJECTIVES

- to help building a new personal narrative for boys and girls at risk of school dropout;
- to experiment a creative use of technology aimed at increasing one's ability to express oneself;
- to improve self-esteem and self-confidence of boys and girls in difficult life situations.

This Digital Atelier wants to stimulate teenagers to conceive new narrations to describe and tell about themselves. In fact, the risk is that adults always use the same words to describe the teenagers, in this way closing their story, especially in the case of difficult boys and girls. This Digital Atelier tries to take some possibilities offered by technology to put in circulation words and images that we use to tell each other, to think of ourselves, to plan our lives. The DA develops a path that alternates between single, couple and collective work.



www.vimeo.com/285785868



LITHUANIA

The Lithuanian experimentation took place from January to May 2018 in the two schools Ragaine Progymnasium and Simonas Daukantas in Šiauliai city, and involved 82 students in total and 5 trainers.

The project methodologies helped the trainers to organise their work and at the same time to encourage the creativity of students and their own. The 5 Digital Ateliers were implemented and adapted based on the creativity and the capacities of students. Interesting on the experimentation was to observe that students are much more involved into the learning process when they are allowed to use modern technologies. An aspect that was very surprising, and that emerged with the DA *Emotions decoded* was on the big necessity of handling and talking about emotions. Students were not used to talk about emotions and feelings, and very negative expressions emerged during the DA, that stay very often out of the school interest, but which have an important influence on real and virtual life of adolescents. Another aspect was that often the students have shown a bigger knowledge on new apps and their application than teachers which opened a different learning hierarchy. During the lessons, cell phones are very often avoided as means of distraction. The process of introducing ICT during lessons is still quite slow. But Interdisciplinarity is being implemented more and more and the Digital Ateliers contributed significantly to promote a bigger openness from sides of teachers and schools, having had a very positive feedback.

In the following pages a short summary of the 5 Digital Ateliers implemented in Lithuania.

TRANSFORMING MY CITY / DESIGNERS OF THE CITY

KEY QUESTION

How can we contribute to making our local city more attractive to us and tourists?

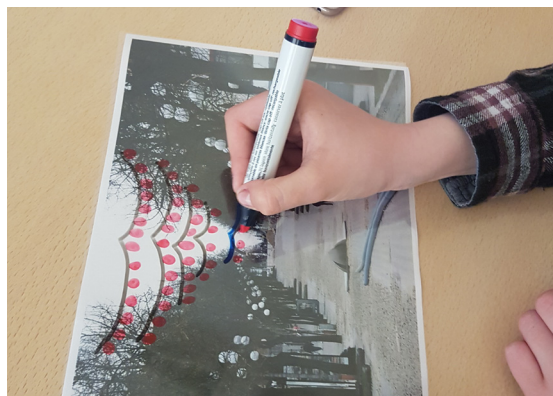
OBJECTIVES

- To encourage children to learn more about constructions, buildings;
- Using different static and dynamic tools to stimulate the joy of discovery, imagination and creativity of workshop participants;
- To give children a sense that they are creators/ designers of their own city;
- To develop a wide set of skills: creativity, orientation, artistic; knowledge: mathematics, arts, history, IT;
- To make indirect suggestions to the local authorities, tourism center to make one's local city more attractive by offering new tourist routes complemented with objects of augmented reality.

This Digital Atelier focuses on creating buildings, landscape using different techniques of Augmented Reality and decorating the city (with the help of the map) with them in order to contribute to making it prettier, more modern and attractive to local residents and tourists. In addition to the augmented reality apps, prints of photos of the city places under reconstruction were used, which were selected by the students themselves. Specific transparent paper was placed on the photograph and drawn with markers in this way also creating augmented reality.



www.vimeo.com/299389484



EMOTIONS DECODED

KEY QUESTION

Are we the ones who control emotions or emotions control us?

OBJECTIVES

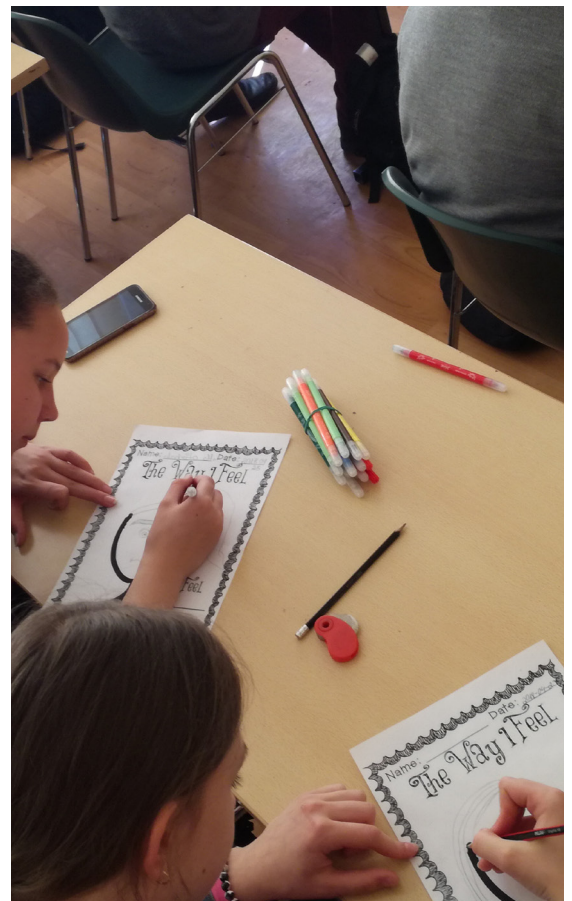
- To subject ICT for learning about emotions;
- To help recognise, name and manage emotions to contribute to improving mental health of students;
- To contribute creating good atmosphere in the class, school;
- To contribute to stopping bullying in the class, school.

The Digital Atelier focuses on learning about emotions with the help of ICT tools, different materials, apps, movies, presentations, methods and in synthesis of different subjects.

In order to successfully implement all parts of the workshop a prior preparation is necessary on the Forum theatre and Laughter Yoga, however, in this case it is aimed at implementing at least basic principles.



<https://vimeo.com/299389907>



TRANSFORMING MY CITY/ DESIGNERS OF THE CITY

A Digital Atelier from Lithuania



MISSION (IM)POSSIBLE?

KEY QUESTION

How can we improve relations between school, parents and community?

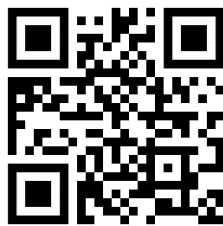
OBJECTIVES

- To use different ICT tools to foster better relation in the class, encourage integration of all students into common activities, removal of tension between different groups in the class;
- To improve relations between school, parents and community;
- To incorporate elements of different subjects and ICT tools.

The Digital Atelier focuses on team building activities while incorporating elements of different subjects and ICT tools. It is applicable in different contexts: can be used solely in the class or it can be used to create closer, understanding relations between class, parents, school and community in general.

It is aimed at different skills development through active, creative tasks.

The workshop also encourages common activities between all class members, encouraging involvement of the “quiet” and introverted ones.



www.vimeo.com/299390096



DAY IN THE MUSEUM

KEY QUESTION

Do ICT connect or separate us from our parents, grandparents?

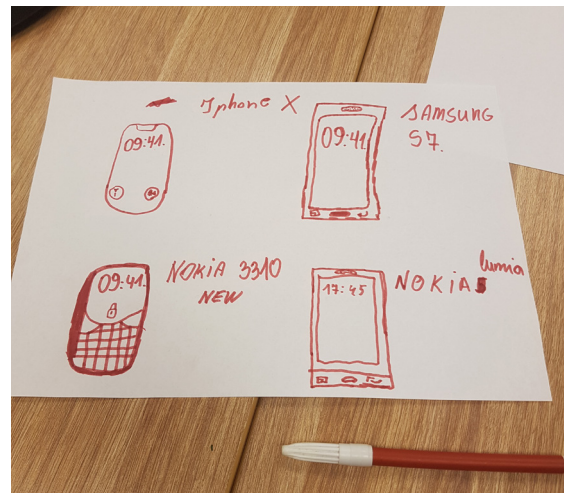
OBJECTIVES

- Using different ICT tools to improve communication between different generations.
- To transfer learning from schools to museums, galleries.
- To encourage lifelong learning.
- To encourage knowledge share between different generations.

Workshop was organised in the premises of a museum. Participants were mixed (teenagers, parents, grandparents). At first a tour is organised in the museum (its history, presentation of the current exhibition). Afterwards in an education room everybody is sitting mixed or intergenerational groups are formed. The following tasks are being performed: trying to remember a poem and filling in the missing words; creation of the poem looking at a piece of art; power point about stereotypes about elderly people (presented by students); then a discussion between students and elderly people – what do people say about young / elderly people; creation of a postcard with an elderly person and a piece of art, printing it out and sending best wishes to him / her; work in intergenerational groups – creation of a poster (using online tools, apps) – “Positive sides of being older”, printing posters and making an exhibition in the museum / gallery / school or making an online exhibition.



www.vimeo.com/299390332



ECO-FRIENDLY CITY

KEY QUESTIONS

- Do we know fauna and flora in our own city?
- How can we make our city friendly to environment?

OBJECTIVES

- To stimulate eco-friendly thinking;
- Raising community awareness about pollution;
- Contributing to finding solutions for environmental problems in the city;
- Proposing concrete solutions to solve concrete problems in the city.

This workshop includes different activities from which the students can choose according to their interests:

- Using internet to find examples of eco-friendly solutions in the city and present them to other groups as good practice examples (in groups of 5);
- Using Tinkercad.com tools to design an object that would help to solve some environmental problem in the city (individual or group work);
- Using materials that can be recycled to create works of art and make an exhibition in public library, make a dissemination campaign with photos, collages and upload them in school media networks or websites to let as many people as possible to know;
- To collect and present tools / channels of dissemination used (a common work by the whole group - composing a dissemination strategy using online programme - <https://creately.com>)
- To create a poster for community awareness about pollution and suggested solution (<https://infograph.venngage.com>)

In our experimentation students have chosen to create a poster. Additional activities were introduction to mind-mapping method, logo creation technologies, also, participants made a research of biodiversity in the city using mobile apps. After this research they had a discussion on how this biodiversity is influenced by humans and shared the ideas on how can it be protected.



www.vimeo.com/299390181



POLAND

In Poland all Digital Ateliers we realized in Bytom. All DA were concentrated on local history and identity. Bytom, city where we realized our DA is a city in Silesia with 170 thousand inhabitants and interesting and quite long story, it is one of the oldest cities of Upper Silesia, originally recorded as Bitom in 1136. It received city rights in 1254.

In all DA took part 154 students from 5 different schools. We designed our DA as a cycle, but in the same time it is possible to organize only one chosen DA. Small groups of students took part in each DA, which gave them a possibility to develop different competencies as well as to see all the process of discovering identity and locality. All DA was led by two main teachers but at the same time observed by others which gave them a possibility to gain the spirit of methodology. As they said after DA it's a very interesting way to work with youth, to develop different competencies (not only digital and media, but also social and interpersonal).

After each and after all DA we collected very positive feedback from participants of the workshop. They underlined that DA gave them a possibility how to use apps they had known in new, more creative way, how to use digital media. The DAs gave them a chance to develop their media and digital competencies (they said: I learned how to take photos, how to use virtual maps, how to create a video) and social skills. This social skill was even more important for a major part of participants. They underlined that this kind of activity helped them to integrate in a group, but also to open up to the people they didn't know before (in this point both: participants of workshops but also passers-by they met in the city during some activities).

All 5 DAs are taught and designed as a kind of a cycle with a common goal to discover the locality. But, of course, each DA can be organized independently.

In the following pages a short summary of the 5 Digital Ateliers implemented in Poland.

CITY FONTS

KEY QUESTION

How to talk about your city and discover it using new technologies?
stimulate participants' curiosity

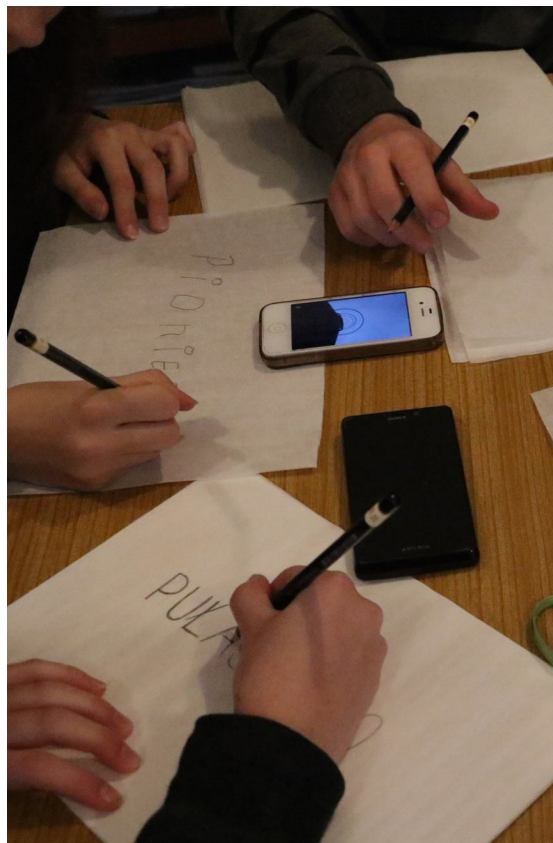
OBJECTIVES

- Focus on the neighbourhood.
- Plan route of a walk using school competencies and applying them creatively with new technologies.
- Experience city space with different senses - recording sounds and taking pictures with smartphones.
- Promote being open to others and curious about their work.
- Gain competencies of using programmes and apps.

The main goals of this DA was to help participants to discover their own region, strengthen their identity and create the image of their place of residence. On the same time during the DA they were discovering unique fonts of the city in use of new technologies. All of the activities were connected with apps thanks to which participants created a map and animations.



www.vimeo.com/283409962



URBAN BOX

KEY QUESTION

How to discover the history of family internal migrations in my town using new technologies?

OBJECTIVES

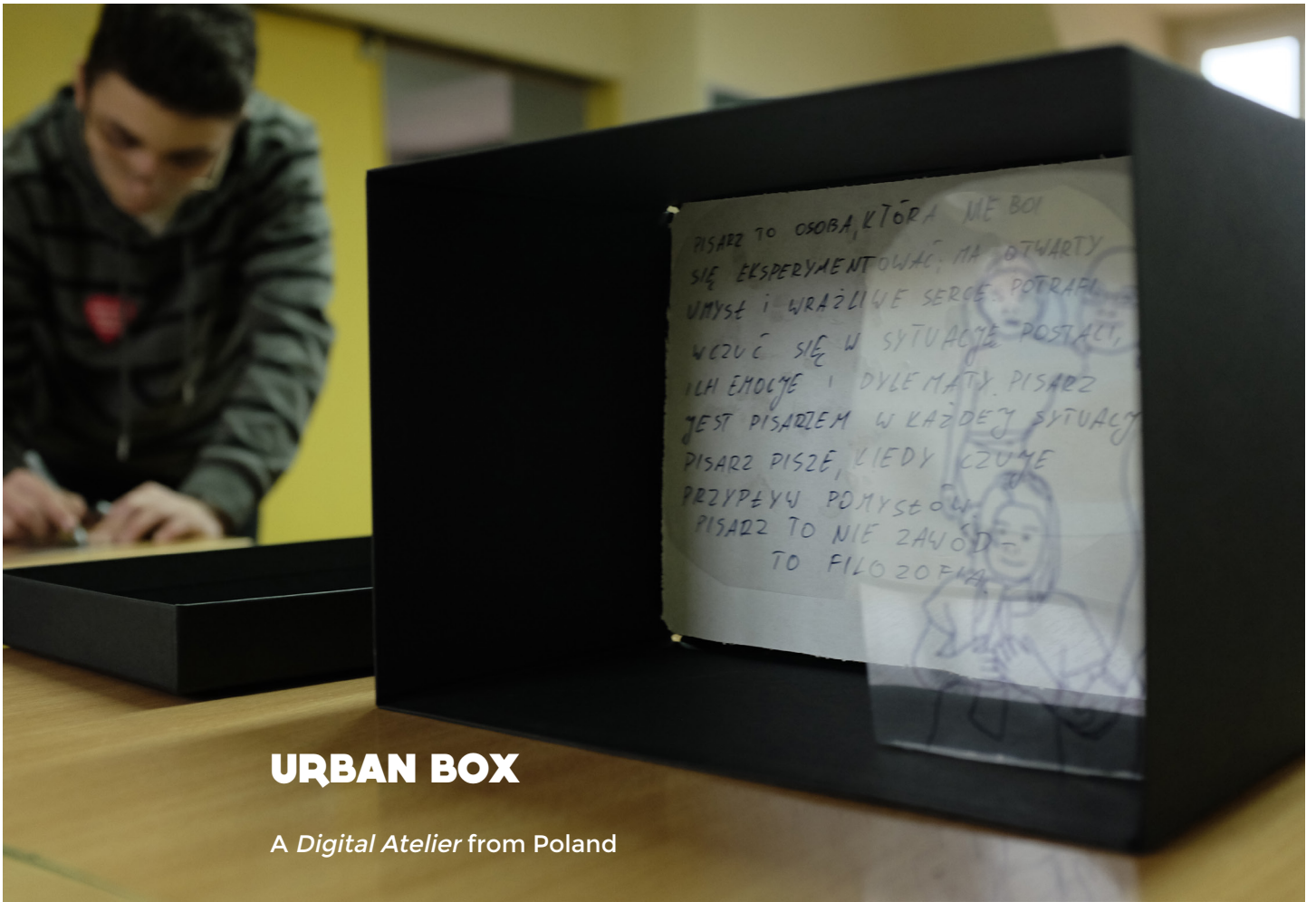
- focus attention on family stories,
- use technology to collect family stories,
- create a story using family memorabilia,
- digitization of family memorabilia,
- creation of the memory box,
- develop competencies needed to use apps and programs.

This DA required from participant engagement not only during the workshop but also before. They received a task to collect some memorabilia - such as photographs, medals, letters, objects - important for them and their family as well as to record voices of family members with explanations: why are this memorabilia so important? During this DA participants use apps to record their family stories and to create an innovative way to show them to other members of their family. What's important to do this they combine both: manual creative and artistic way and new technologies. With those activities we bring them to ask themselves the question: Where am I from?



www.vimeo.com/283409240





URBAN BOX

A Digital Atelier from Poland



CITIZENS

A Digital Atelier from Poland

CITIZENS

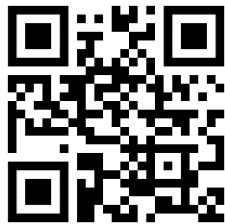
KEY QUESTION

What does it mean to be a citizen?

OBJECTIVES

- focus on a human being,
- using smartphones to build relationships, make contact with a stranger understanding citizenship,
- being aware of the power of photography to convey information,
- building awareness of being a citizen.

In this DA we concentrated on portait. We started work with manual work with wooden briquettes. Participants had to decorate them by using newspaper sections and decorative materials and create faces of city habinat. After that we went to he city to meet real inhabitants of the city and make contact with them. The task was to take photo-portaits to collect faces of cities passers-by. We were also redrawing collected photo with carbon to A3 paper using the method from the "Memory project" and - in the end made timelaps films.



www.vimeo.com/277655025



EMOTIONS

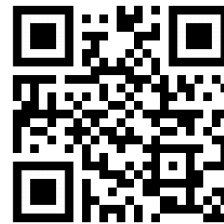
KEY QUESTIONS

How to talk about emotions with help of new technologies, apps and GIFs?

OBJECTIVES

- develop skills of recognizing and naming emotions,
- develop self-expression skills,
- develop openness, ability to interact with strangers,
- gain competencies of using programmes and apps.

We invite participants to take a look at emotions from different points of view. The first task was to tell stories about emotions using only emoticons, no words. It made us to face the question if it is possible to communicate by using only emoticons, without words. Participants had very interesting reflection in this point. We use plasticine to make heroes of our stories (putting pieces of plasticine on face one of the participants - our hero) and took photo of them to create after comics and storyboards. Participants used their competencies of taking photo to develop the competencies of telling stories. We created also social campaigns entitled "Emotions are important" using the Inshot app



www.vimeo.com/282464915



URBAN LEGENDS

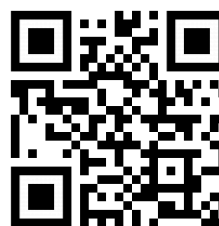
KEY QUESTION

How to show city historic legends/ cultural text in a creative way using new technologies?

OBJECTIVES

- analysis and interpretation of the text,
- reformulating the text into your own artistic vision,
- focusing on the nearest area - placing legends in the locality - work with the city map,
- use of urban space for text visualization,
- developing openness, interacting with neighbours,
- use of applications.

For organize this DA was important to find some local legend/history. It was a task for teacher but could be a part of work with students as well. In the place of a legend it is possible to use any cultural text. The main task for participant is to reformulate the content of this text into a comic, made in urban space. It should make this text (legend, cultural text) easier to understand. To do this we used mainly PICPAC app as well as various paper material such as for example wrapping paper. It gave possibility to learn and reformulate urban legends according to own artistic vision in a creative and modern way.



www.vimeo.com/283410859



TURKEY

All 5 Digital Ateliers in Turkey were implemented in different schools in the Esenler district, involving around 160 students and 18 teachers. During the implementation of each Digital Atelier teachers and students had different experiences. After students' and teachers' feedbacks we became aware that classical teaching methods were not enough to learn effectively. With the DAs, students found opportunity to learn lessons more enjoyable way. We observed that most of the students which attended to Digital Ateliers at first thought that the Digital Ateliers was not a lesson, firstly they were thinking it is a game or it is an extra curriculum activity. But during implementation of the DA they played their games whilst learning the programme of their lessons. In this way all Digital Ateliers reached the goals which we will explain one by one on the next sentences.

With the classical teaching methods, students don't get the chance to test a lesson as they don't have the right to make mistakes. But thanks to the Digital Atelier they found this opportunity and their experiences during implementation of DAs reinforced their learning capacities. When joining an atelier the student had to read the introductions, listen to their teachers' explanation and explain their tasks to their friends and teachers. They were in this way more effectively involved into the lessons. Students and teachers alike enjoyed the connection of the lesson with the Digital Ateliers and experienced the fact that they can have an alternative lessons plan. The DAs give them the possibility to enrich their lessons while in connection with the national curriculum.

In the following pages a short summary of the 5 Digital Ateliers implemented in Turkey.

PLAY WITH WORDS

KEY QUESTION

How can we form simple sentences and words using digital drawings?

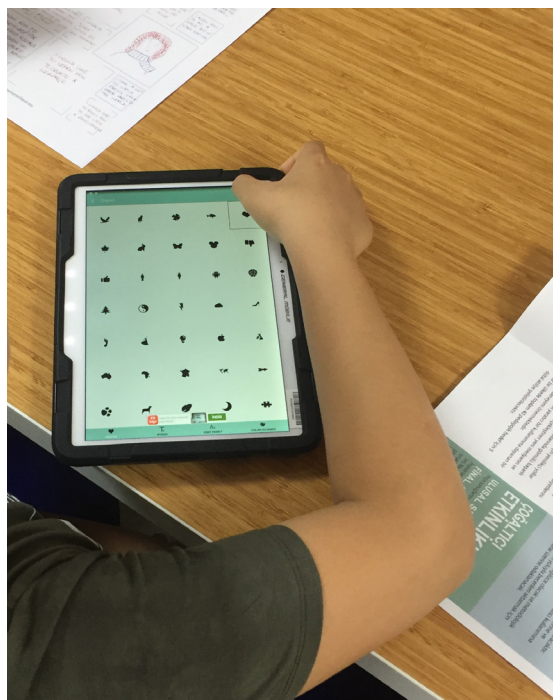
OBJECTIVES

- Making simple sentences
- Visualizing words and objects
- Memorizing words in a fun way
- Learning correct pronunciation

The general aim of this Digital Atelier was to correct misconceptions of students in specific a subject. During the implementation on this atelier firstly they have choose a topic and they try to find different concepts which are related with this topic's vocabulary. Also this Digital Atelier gives a chance to enrich their visual memory. With this way it provides permanent learning for students. One of our ideas on this atelier is photo editing, they are choosing a shape and they decide a colour which is suitable with the topic. During studying period of DA they can make changes on their previous ideas. After they finish their word cloud they can share their outputs with their classmates with this way they can give comments about other outputs and this ensured peer learning. The works on this DA encourage students to think in a questioning perspective.



www.vimeo.com/293180742



ANIMALS' SOUND

KEY QUESTION

How can we teach about animals and their sounds?

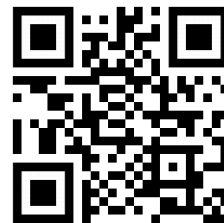
OBJECTIVE

- Teaching the use of applications which are related to animals

The general aim of this Digital Atelier was to show wild animals to the students in 3D way which they can't see those animals except in the zoo. It is not always possible to organise a trip to the zoo with students to show this kind of animals and when a biology teacher try to teach to students this kind of animals they can't remember it easily if they only read instruction. This Digital Atelier provides partly learning by leaving methodology.

This DA helps to understand in a concrete way of abstract concepts theoretical events. And it helps to improves and enrich of the students imagination. Also it helps to teach lessons in an enjoyable way.

On this atelier when they learn each animal also they can learn which animal eats which food and they can differentiate carnivorous and herbivorous concepts in the biology curriculum. Also it provides to hear animals' sounds. By the end of the atelier, students took some photos about their outputs and they share these photos on social media.



www.vimeo.com/293176332



BIOGRAPHIES OF FAMOUS PEOPLE

KEY QUESTION

How can we teach the Atatürk's life to the students?

OBJECTIVES

- Teaching History
- Teaching how to write a biography
- Teaching Atatürk's life

The general aim of this Digital Atelier was to teach history to the participants. Actually it gives a chance to the students to learn important peoples life in an enjoyable way. While preparing the Digital Atelier they can familiarize with the photos of important people and they should make a research about that important people's life and ideas. And then if they want they can prepare a presentation or they can find a ready video about the important person's life. The next step is to match this with the photo of the important people. For this matching they have to use a special programme with their tablets. In this atelier, participants have a chance to learn with visual and auditory methods, supporting permanent learning. With the tools of this Digital Atelier, all teachers can use it for their own lessons. Its mean this atelier is suitable for any kind of lessons in the curriculum.



www.vimeo.com/293178725



WEB 2.0 TOOLS IN EDUCATION

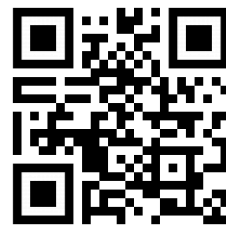
KEY QUESTION

How can we use WEB 2.0 tools in education?

OBJECTIVES

- Using technology in education
- Learning educational applications
- Preparing lessons with ICT
- Using social media in ethic rules

The general aim of this Digital Atelier was to give a chance to the students to show their ideas about any topic. They can give information to their friends or to their teachers; they can share and discuss their ideas with this way they can involve to the lessons effectively. Thanks to this DA atelier, students and teachers can create a more active and participatory classroom environment. Online tools and resources have made it easier for teachers to instruct students, and for students to collaborate with those teachers and with other students and parents. In the educational environment, group work, effective learning, high-level thinking, constructivist learning, individual learning, taking responsibility, etc. contribute to the development of skills.



www.vimeo.com/296031829



LET'S DISCOVER OUR BODY

KEY QUESTION

How can we discover the human body in a more detailed way?

OBJECTIVES

- To get detailed information about organs
- To learn how the body system Works.
- To analyze each organs in details one by one with 3D glasses
- To discover with which technologies we can better know
- To reflect and present our body using technology creating a link with the medical/ biology and the “representation” of the own body in the media, social network etc.

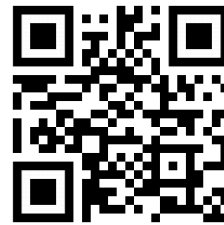
The biggest benefit of this atelier is to transmission of the message with sound and image with meaning integrity. Also this atelier is very excited and enjoyable for students. During implementation of atelier the students will use 3D Glasses and VR videos which already prepared for a specific aim.

Before using this method, the students were learning body system on the paper and they saw organs on the paper.

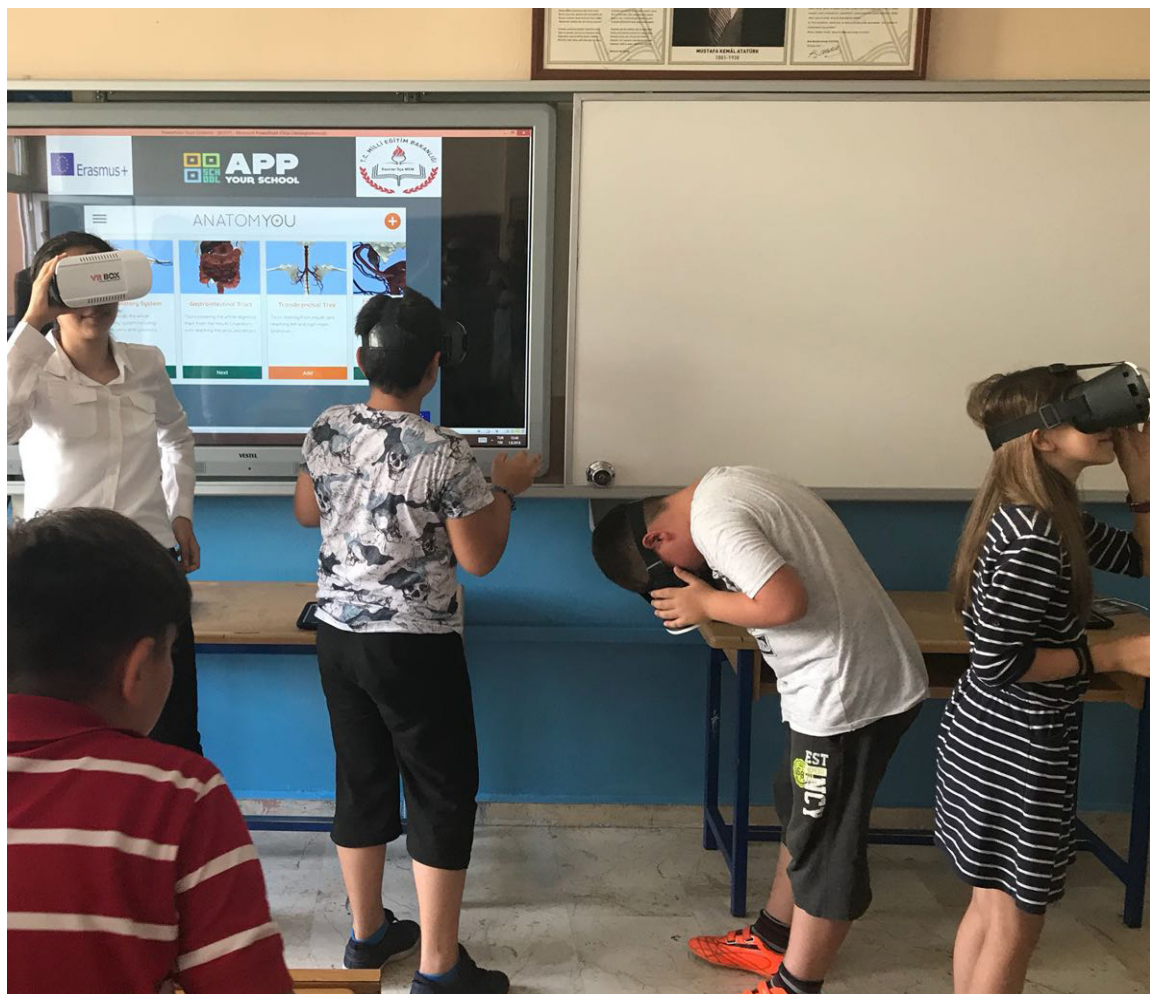
But with this way it will not be easy to remember details of body system or organs. In this way when they use 3D Glasses, they can have a chance to see each organs with 3D way one by one according to their orders.

In cases where movement is important for learning (eg running a machine), moving films are more effective than other visual materials in teaching and learning concept. Different peers of students can collaborate with VR videos to gain a common experience to effectively discuss a problem.

Nowadays VR videos are very popular and each teacher can find different videos according to their lessons and students can buy easily 3D glasses for themselves and they can watch educational videos at their home and they can watch the videos for few times until they can understand. In this way we can provide individual differences.



www.vimeo.com/293179668





ANIMALS' SOUND

A Digital Atelier from Turkey

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

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 (foly 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.

**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

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.

FLIPPED CLASSROOM by PIEKSÄMÄKI UPPER SECONDARY SCHOOL

VIRTUAL REALITY APPLICATION AND GEAR HTC-VIVE by PIEKSÄMÄKI UPPER SECONDARY SCHOOL

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.



BIG DATA
by
SAVONIA UAS

IOT
by
SAVONIA UAS

**INDOOR
NAVIGATION**
by
SAVONIA UAS

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

SCHOOL BULLYING

by
NOUS, INSTITUTE
OF DIGITAL LEARNING
AND COMMUNICATION,
NGO

LOGO IN EDUCATION: A COMMUNITY OF PRACTICE AND LEARNING

by
KATERINA GLEZOU,
(TEACHER AND
COFOUNDER)

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.

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

GAME DESIGN by ROBOTIXLAB

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.

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

BUGBITS AND SOUNDSCAPES by MART AND THE UNIVERSITY OF TRENTO

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.

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

**PUZZLE
SMARTPHONE**
by
AVISCO

**PALAZZO
GRASSI TEENS**
by
PALAZZO GRASSI
AND PUNTA
DELLA DOGANA

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.

**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.

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

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.

**MOBILE
FAB-LAB**
by
FAB LAB

**CODE
ACADEMY
KIDS**
by
CODE ACADEMY

**ANIMATION
ACADEMY**
by
COLLEGE OF SOCIAL
SCIENCES

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. Rasberry 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

SCHOOL WITH CLASS 2.0 by FUNDACJA SZKOŁA Z KLAS

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.

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**

**GENERATION
CODE**
by
**ASSOCIATION OF
CREATIVE INITIATIVES**

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 become 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.

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 **ŞEHIT SAIT ERTÜRK ORTAOKULU**

FAITH INTERVIEW by **ESENLER İLÇE MILLİ EĞİTİM MÜDÜRLÜĞÜ**

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 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.

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.

**OPEN AIR
LIBRARY**
by
**YUNUS EMRE
ORTAOKULU**

**COLORFUL
STORIES**
by
**BRAHIM TURHAN
ÇOK PROGRAMLI
ANADOLU LİSESİ**

**EACH
CORNER**
by
**GÜZİDE ÖZDİLEK
KIZ ANADOLU MAM
HATIP LİSESİ**

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;

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

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

PROJECT MANEELE

by
THE GENERAL DIRECTORATE
OF EDUCATION
MANAGEMENT SERVICES
OF THE ALENTEJO
REGION

PROMOTING CHANGES IN LEARNING

by
THREE SCHOOLS
OF ALENTEJO

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.

**EBA: THE PATH
OF LEADERSHIP**
by
CÂMARA MUNICIPAL
DE ALVITO

**MISSION
EXPLORE BOOKS**
by
EXPLORER
HQ LIMITED

**MORE – MOBILE
RESOURCES
ON EDUCATION:
LET’S LEARN
WITH EACH
OTHER**

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.



BUGBITS & SOUNDSCAPE

A Best Practice from Italy
by
MART Museo d'Arte Moderna e
Contemporanea di Trento e Rovereto
and the University of Trento

**DIGITAL
ATELIER AND
THE DESIGN
OF ICT IN
SECONDARY
SCHOOLS**

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ABSTRACT

This chapter introduces the general frame of a Digital Atelier: meaning, methodologies, key aspects. Starting from a dictionary presentation (to investigate words) and from the Italian National Digital School Plan (to find aspects interesting for other european countries) we then present the two approaches we seek inspiration from for project (the pedagogical approach of Alberto Manzi and the design approach of Bruno Munari) in order to imagine, design and test creative Digital Atelier for teenagers.

KEYWORDS

DESIGN

ART

DIGITAL ATELIER

ITALIAN METHODOLOGIES

ICT

CREATIVE THINKING

DIGITAL ATELIER: LET'S START WITH THE DEFINITION

The **APP YOUR SCHOOL** project defined the Digital Atelier starting from the Italian National Digital School Plan (PNSD - Action#7, pag.50), as:

“innovative and modular spaces where to develop the meeting point between manual skills, craftsmanship, creativity and technology. In this vision, technologies have an enabling role but not exclusive: as a sort of “digital carpet” in which, however, imagination and doing meet, combining tradition and the future, recovering practices and innovating them. Educational scenarios built around robotics and educational electronics, logic and computational thinking, manual and digital artifacts, serious play and storytelling will find their natural home in these spaces with a view to building transversal learning.”

The Italian National Digital School Plan was the base of our European experimentation.

OUR RESEARCH ON DIGITAL ATELIER STARTED FROM THE DICTIONARY

WHAT DOES *DIGITAL* MEAN? (TRECCANI ONLINE)

From the Latin *digitalis*, derived from *digitus* ‘finger’ • before 1575. *imprints; percussion; exploration; numbering*

From the English *digital*, derived from *digit* (from the Latin *digitus* ‘finger’) ‘digit (of a numbering system)’ • before 1963. In electronics and computing, it refers, in *contrast to analogue*, to equipment and devices that deal with quantities in numerical form, that is, by converting their values into the numbers of a convenient numbering system (usually binary, or systems derived from it), or are otherwise *numeric*; it also refers to quantities dealt with by these devices, and their representation.

WHAT DOES *ATELIER* MEAN?

From old French *astelier* ‘building site’ • before 1843. *“atélié”* s.m., French. [from old French *astelier*, derived from *astelle* “wood chip”, which in turn is from the late Latin *astella*, dim. of *astula* variant of *assula* “chip; wooden board”]. Properly, the workplace of artisans; also, study, workshop, above all of artists: *that of a painter, of a sculptor; of restoration*; and with extensive use, . *photographic*.

The vocabulary suggests some approaches starting from the words:

- **BUILDING SITE:** it is the perfect image of a place where things are in progress. The work has a goal and set time, but we proceed by bringing together the design and reality. Perhaps there is also tolerance for confusion, for disorder, for error. There is room to redo things, if necessary. There is collaboration.
- **WORKPLACE:** in a workplace there are objectives to achieve and real tasks, there are deadlines, roles and skills. There is also work to take home. There is coordination (synchronising efforts and sharing resources), cooperation (acting in a way that aims for a common goal) and co-creation (producing a new result together).
- **CRAFTSMAN²:** it is making art by hand. It is the clever and skilful handiwork. It is contact with material. It is the project that becomes concrete thanks to the industriousness and skill of the hands. It is the analogue world that stops being in contrast with the digital one. They are no longer opposed but complementary.
- **IMPRINTS³:** it is leaving the sign of being there, it is representation of self and abstraction at the same time, in a sign/symbol/code. But it is also knowing how to face the unexpected: impromptu, without being able to prepare, improvising. These are new situations where we need to use what we know and what we can do to orient ourselves in a new situation or task.

1 Original text (ita): “spazi innovativi e modulari dove sviluppare il punto d’incontro tra manualità, artigianato, creatività e tecnologie. In questa visione, le tecnologie hanno un ruolo abilitante ma non esclusivo: come una sorta di “tappeto digitale” in cui, però, la fantasia e il fare si incontrano, coniugando tradizione e futuro, recuperando pratiche ed innovandole. Scenari didattici costruiti attorno a robotica ed elettronica educativa, logica e pensiero computazionale, artefatti manuali e digitali, serious play e storytelling troveranno la loro sede naturale in questi spazi in un’ottica di costruzione di apprendimenti trasversali”.

2 [derived from art]. - s. m. (f. -a) (mest.) [who practices a manual art for the production of goods and services] ≈ (lit.) craftsman, (old) Artist. adj. [artisan, made by a craftsman: artisan fair] ≈ and [ARTISANAL (1)]. (Treccani online)

3 Impression, mark, sign, trace, [of steps] imprint.

- **PERCUSSION:** it is a gesture that produces an effect. Among the meanings of the Italian verb “percuotere” we find one that describes what we would like to happen in a Digital Atelier: to provoke a strong emotion in someone, a strong disturbance, an intense feeling, of surprise, wonder.⁴
- **EXPLORATION**⁵: observation is fundamental and must be careful and precise; it is careful seeking, for the purposes of investigation and research, it is careful reconnaissance that opens the door to discovery, to acquiring new information, leaving undefined the limits, which only exploration will define. It is the space in which the analytical and the poetic can meet: observing carefully to understand, but also to imagine, to grasp.
- **NUMBERING:** it is the graphic representation of the numeral system, that is the possibility of giving order to what has been discovered and experienced: in the form of a catalogue, an exhibition, a map... it is a fundamental phase of the Digital Atelier. It is the student who documents their discoveries, who keeps track of their path, who “counts” the variants they discovered, found, came to understand...

IN RELATION WITH OTHER EUROPEAN CONTEXTS (AS IN THE EXAMPLE OF PORTUGAL)

The digital atelier, which concept was first conceived from the Italian National Digital School Plan meets not only the current Italian context but finds its correspondence, as the project has shown, in the contexts of other European countries as for example in the current Portuguese context, both in terms of legislation and in terms of practices developed in a formal and informal environment. In addition to being able to be developed in specific subjects (ICT, Citizenship and Development), they also find their correspondence like within the framework of projects integrated into the citizenship education strategies that each school is creating following the National Citizenship Education Strategy.⁶

These projects, like the ateliers, aim to solve pressing problems in the specific socio-cultural and geographical context, promote collaborative and cooperative work, use diverse and innovative methods and tools, but also innovative ways of using art and technology, to creativity and imagination.

Another correspondence is in the concept of the digital atelier in trying to answer to some problems that schools all over Europe face like student demotivation, problems with school achievement and in the worst case, Early School Leaving. In Portugal, the eagerness of schools and teachers to change their classroom methodologies and find innovative environments that support the growing request of the teacher to face the problems nominated, gave birth to initiatives like the Innovative Educational Environments (Ambientes Educativos Inovadores), also known as future classrooms (Salas de Aula do Futuro, SAF), inspired by the European Schoolnet’s Future Classroom Lab and with the support and promotion of the DGE (the Portuguese Directorate-General for Education). The DGE has organised a number of events, e.g. Pedagogical Days, focusing on new learning spaces and new teaching methodologies within them. Another important initiative is the Learning Laboratories (LA) initiative, also developed by the Directorate-General for Education, in partnership with the European Schoolnet (EUN), which consists of the dissemination of methodologies for curriculum integration of ICTs that have been validated in pilot projects at European level. Through the LA initiative, the DGE provides a set of tools, guidelines and resources to support schools in the design, adaptation and implementation of innovative teaching and learning scenarios.

This initiative provides an opportunity for schools to assert themselves, among others, as spaces for innovation, catalysts for collaborative work, the development of creativity, autonomy and critical thinking.⁷

It is within this framework, that could be representative at European level, that the digital atelier finds a correlation as a modular and easily transferable “place” that opens the way to new ways of meaningful learning, active, informed and responsible participation, innovation and pedagogical creativity in order to respond in an inclusive logic to all students and in the commitment of fighting Early School Leaving.

4
www.treccani.it/vocabolario/percuotere/

5
From Latin *exploratio* -onis, derived from *explorare* ‘observe, investigate’ •15th C.

6
Monteiro, R., Ucha, L., Alvarez, T., Milagre, C., Neves, M., Silva, M., Prazeres, V., Diniz, F., Vieira, C., Gonçalves, L., Araújo, H., Santos, S. e Macedo, E. (2017). *Estratégia Nacional de Educação para a Cidadania*. Lisboa: Ministério da Educação. www.dge.mec.pt/sites/default/files/ECidadania/Docs_referencia/estrategia_cidadania_original.pdf

7
See: erte.dge.mec.pt/laboratorios-de-aprendizagem

HOW CAN A DIGITAL ATELIER BE DESIGNED AND REALIZED IN PRACTICE?

The shape of the “Digital Atelier” in the **APP YOUR SCHOOL** project is an important and strategic innovation. In a Digital Atelier there must be a meeting between:

- **ANALOGUE/DIGITAL**
The analogue represents a wonderful opportunity to slow down the digital and let the child have a new, meaningful experience which can sink in.
- **USELESS/USEFUL**
For “useless” we suggest the space where our personal inner “anchors” are possible, those that help us give meaning to things and to ourselves.
- **MAKING/UNDOING**
It is the necessity of moving the body and hands in order to imagine, ask questions, produce hypotheses and verify them.
- **INDIVIDUAL/COLLECTIVE**
The continuous dialogue between I and we, between taking charge of oneself and collective responsibility.
- **POETIC/ANALYTICAL**
The poetic and divergent gaze can allow more in-depth analysis, as well as careful analysis which is open to new and unpredictable views of the world.
- **ARTISTIC/SCIENTIFIC**
These languages and tools, which the child will later discover as disciplines, are in dialogue with each other to provide experiences that lead to discovery and wonder.

Following further the guidelines of the Italian NDSP we can highlight some key concepts that are essential to understand the methodological frame applied in the Digital Atelier.

“Education in the digital age should not focus on technology, but on new models of educational interaction that use it”

We started with the presupposition that we could reread the pedagogical, design, artistic and technological approaches of Alberto Manzi and Bruno Munari, to better understand what to do and how. We could therefore experiment with new things, starting from “old questions”, with the advantage of working in an area that teachers would find familiar and stimulating. We started not from technology, but from teaching. We banked on the fact that students would willingly spend time discovering the technical uses of new software or apps in their free time, or creating quick tutorials of things they could do well (for example in Minecraft), without feeling the need for the teacher to become the workshop technician, an expert in each new technological offering. We ask the teacher to be curious about what can be done with technology, to look for interesting inspirations within their passions to facilitate personal research; we asked the students to make their desire to “fiddle around” with technology available to their Digital Atelier. Of course: they haven’t all done it, nor done it all the time. But in class there was always someone who could act as a mentor to others, who enjoyed discovering “how it worked” and felt gratified to be available to the class, the expert who solved the most complex issues.

“In this paradigm, students must be knowledgeable users of digital environments and tools, but also producers, creators, designers”

In a Digital Atelier it is creative thinking and imagination that guide exploration, structuring the cues for critical thinking. To do, I need to think, I need to know. If we talk about making our students into:

- **DESIGNERS:** then we must work primarily, as adults, on the method, not to restrict questions and procedures – as is often the case – but to help students and other teachers find their own path, while indicating some necessary steps;

- **CREATORS:** inventing is difficult, imagining is necessary. Creativity, fantasy and imagination play a fundamental role in the atelier and are not incompatible with mathematical/scientific thought. Making predictions, imagining what can happen, visually exploring variations and phenomena allows us to gather knowledge and information from which something new can then be created. We can find answers to scientific questions using technology in a divergent way: how can we explore the seabed? How can we see what animals see? “Creativity, for Manzi, is being able to face and overcome concrete problems”: “it means helping an individual defend themselves from the laziness that could arise from using ever more perfect machines; getting used to living, always remaining masters of your own critical senses”⁸;
- **PRODUCERS:** space for doing things for real is fundamental, simulation is not enough; “let’s do it”. Getting to the final product gives the student and class satisfaction, should allow positive reflection, and marks an achieved goal after which it is possible to do even better. Therefore there can not be a disconnect between the process and the product: when we work, many products are produced, if there are plenty of hands at work. It is the visual catalogues that trace graphic experimentation, the posters that show the point of what has been learnt, the tutorial that helps other classmates work better.

“And on the teachers’ side, in particular with regards to digital skills, they will have to create the right conditions to act as facilitators of innovative didactic paths based on content that is more familiar to their students”.

The teacher is the designer and the researcher: they know how to combine interesting stimuli and how to manage a class in an atelier. It is usually a quiet and focused class, but also chaotic because each gets to choose their own material, experiment with their own ideas, within the research framework set with the teacher. And the teacher is fully within their role: they may lack a few technical skills for using Aurasma, for example, but they cannot help wondering where the desire to augment reality comes from? And what does it mean to “augment it”, or its opposite, to “diminish it”? How many ways has humankind found to do it? What is the difference between augmented and virtual?

We could discover that “narrative fiction is an archaic virtual reality technology specialising in the simulation of human problems” because in stories we could take advantage of the “simulated” experience⁹. Here then the Digital Atelier becomes a privileged space to examine the world by making the most of the technology available. Creativity and curiosity (firstly from the teacher) will play the most important role, not technical ability.

“Strengthening the school’s digital infrastructure with “light”, sustainable and inclusive solutions”

“Workshops must be reconceived as places of innovation and creativity, rather than mere containers for technology”

The Digital Ateliers we have tried so far are at a “low technological threshold”: just a tablet connected to the interactive whiteboard, for example. It seemed more interesting to us to design activities that would engage analogue and digital in dialogue, to do artistic and technical work. This is why it has never needed too much equipment. Students have even been guided to use their mobile phone or tablet in¹⁰ a collective creative journey: this allows teachers who do not want to face difficult technical problems to spend more time exploring and researching.

“Turning school workshops into places for the meeting between knowledge and know-how, putting innovation at the centre”

Talking about innovation is always complicated. What is new, and who for?

“The school system, as Jerome Bruner reminds us, gives too much importance to learning what is already known, and too little to finding that which is not known. But how do you teach a student the technique of discovery?”¹¹

The following is the path we have followed in proposing Digital Ateliers.

8
A. Manzi, *Education... but what is it?*, original script archived at the Alberto Manzi Centre.

9
J. Gottschall, *The Instinct to Narrate – how stories made us human*, Bollati Boringhieri, p.75, Turin, 2018

10
The digital school, in collaboration with families and local authorities, must open up to so-called BYOD (Bring Your Own Device), i.e. policies where the use of personal electronic devices during educational activities is possible and efficiently integrated.

11
Jerome Bruner, *Knowing. Essays for the left hand. – Learning by discovery*, 1962

APP YOUR SCHOOL – FROM CONSUMPTION TO INVENTION

Switching from the consumption of technology / to “doing research” with technology / inventing new things and new technologies

1. Passion / consumption / understanding how it works / phase: instruction booklet
2. Teacher’s intervention / to get away from the stereotypical and banal, and ask the student questions / use / the theme of the design / guided experimentation is born
3. Hands-on activity / guided experimentation / inventing / opportunity for personal invention, designing something new

The new is therefore not new in an absolute sense, but new to the student, sufficiently divergent from a consumerist use to open up a space for creation and imagination. The teacher’s personal research is fundamental: our ideas have come from digital art as well as from scientific subjects, from contemporary art exhibitions to historical/literary subjects. The teacher’s curiosity, their imagination in integrating the things they experience, discover and know, is fundamental. A Digital Atelier first exists in the mind of a creative teacher, who is not afraid to tell their students, “I don’t know how to do this, let’s find out together”, “if we get it wrong, let’s try again: let’s make a note of all the mistakes”.

Trusting students can be one way to go, while also preparing a back-up plan and an emergency stop, but with technology we know we can count on their curiosity: “The school should go back to entrusting things to the students: the pleasure of looking for what is hidden, the need to wait, work on it, sniff it out, see it become something that was not there before”¹².

“Technology has a role that is enabling but not exclusive: as a sort of “digital carpet” where, however, imagination and doing come together, combining tradition and the future, taking established practices and innovating them”

The adjective “enabling” is fundamental: to make able, to provide an opportunity for skill, or to become competent, to feel suitable, “ingenious”. This can arise from the constant clash between what you know and what you don’t know, between what you know how to do and what you can’t do yet. In this drive for self-improvement, most keenly desired by the student as a personal challenge, the school gets every student on board. “Not one less” is all here: knowing how to challenge them confidently, like a good video game would: “try again” “good play”.

“Switching from “transmissive” teaching to active teaching”

In Digital Ateliers, but also even earlier in Alberto Manzi’s classes, the traditional lecture did not exist. The questions were to guide the class’ research; the children’s experiences were explored to extrapolate sufficient research data; it was through continuous interaction, through speaking, imagining, making and undoing, that the class discovered the world. The disciplines were the tools needed to do it, not the end. This approach has shaped the Digital Atelier: a question has prompted every phase of the work, activated the students’ knowledge and experience. Technology has let us give work form and visibility; it was a tool for observing and a tool to be observed.

“Rethinking the school as an educational interface open to its environment, inside and beyond the school buildings”

The gaze towards the area and the surrounding environment was a further and necessary guideline we gave ourselves in the Digital Ateliers: developing QR code for the public library, organising a local exhibition, preparing an installation, making posters to involve other students and not just classmates, getting involved with environmental causes or historical heritage; discovering and going out in the neighbourhood; these were some of the strategies implemented to make students feel part of their local community.

The school has recovered its role as a cultural entity in its local area, which in conjunction with other institutions takes care of: “cultivating and at the same time tempering the imagination, so that students are able, as they grow, to examine the new rather than becoming accustomed to it, and so that now and in the years to come, they will know how to make independent ‘smart’ choices in the vast world of cultural opportunities they find outside school.”¹³

“To ensure that, in the digital age, the school becomes the most powerful multiplier of innovation and change in the country.”

12
Andrea Bajani,
*Teaching life with
a bean, school and
wonder*

13
Ibid., p.135

TECHNOLOGY AT SCHOOL

It remains a problem. Generations of teachers “forced” to integrate tools that they do not like, or which do not interest them, are hardly able to design courses which can put their students’ skills and passions to the test.

Of course, the situation cannot be generalized: there are male teachers and female teachers, secondary school teachers who have already integrated the technology in school every day thanks to personal training, the exchange of practices with colleagues, and their personal interests.

To facilitate access to technology for all students, we need to find a way to bring teachers closer to methods and projects that can open up the way to new interests. It is not the teachers who have to move towards technology (this does not seem to have worked, at least not completely), but it is technology that must find a way to make itself appealing to teachers.

We wanted to see what we could learn about using technology in a divergent and creative way, how to make tools which would help students explore the world and express themselves, and experience the poetic, the amazing, the wonderful.

We knew that if we found something along that path then even the teachers would be happy to explore it, because school is a great place to discover the world and oneself: technology is directly connected to life.

“To create fabulous little worlds for everyday use”¹⁴ that arise from an “imaginative technological dissatisfaction”: even before designing, we must give space for teachers and educators’ imagination and creativity, in order to challenge a consumerist use of technology and imagine instead another life thanks to the power of the disciplines, their rigour, to new levels of understanding reality.

The experiments carried out with the Appyourschool project have brought out the need to:

- **EXPLORE THE POSSIBILITIES:** always be open to the many possible ways of doing and thinking, so that everyone is encouraged to give of their best; make it possible to discover a thing’s many aspects so as to avoid simplifying or restricting it by knowing only one aspect; make sure that it is possible and desirable to change one’s opinions when they come into contact with better ones;
- **LET HUMOUR AND PLAY ENTER INTO IT:** playing is a serious matter, calling upon all our senses and our attention and directing them towards an end; self-motivation born from the pleasure of doing something can take students a long way;
- **TACKLE THE PROBLEM OF CREATING:** “it is not the object that should be preserved but the way, the design method, the modifiable experience ready to make something again”¹⁵
- **TRANSLATING THE DISORDER OF REALITY INTO ORDER:** technology has supported the school disciplines involved in translating the richness, variability and disorder of the surrounding environment, bringing into being a provisional order that could enhance the skills, creativity and imagination of the students themselves. We wanted the students to become designers of new uses and technological projects by employing their curiosity for technology to rethink, to some extent, the nature of school. For its part, the school has the obligation to teach children to be able to look carefully, to cultivate doubt, to question habits, to break stereotypes, to understand - but also to overcome - the rules.
- **TECHNOLOGY AS A TOOL THAT IS EXPRESSIVE, CONCEPTUAL AND CAN OVERTURN SEMANTICS,** in the hands of students and teachers who both in a group and individually give the best of themselves in order to produce something functional and useful to the community, even if only in the sense of new and broadened knowledge. “Help others to participate in creativity, spread the methods and techniques of building messages, spread the learning done by everyone for everyone. Everyone has something to say, to stimulate individual creativity to promote collective growth”¹⁶.
- **THE MEDIUM IS THE SAME FOR EVERYONE:** what makes the difference is the creative experience the students have thanks to the school, a place where technology is not taken as is, but is investigated, opened up, used and “manipulated”, away from the usual and the ordinary, to open up new expressive and creative opportunities for all students.

14

A. Tanchis, *The Abnormal Art of Bruno Munari*, Universale Laterza, 1981, p.13

15

B. Munari, *Fantasia*, Laterza, Rome-Bari, 1977, p.144

16

B. Munari, Introduction by Bruno Munari, 1975

Bruno Munari experimented with the photocopier, typographic screens, slides¹⁷, typewriters, films and photography. His artistic career can stimulate new teachers and students, who see him as an excellent example for developing a divergent and creative way of seeing and doing.

In his Manifesto of mechanisation of 1952, Munari calls upon artists (and we do the same by calling upon teachers) to “get to know the machines and distract them by making them work irregularly” by forcing the machine/technology “into a gesture that is unique, anti-economic, artistic, to create a new poetic, magical, artistic society”¹⁸.

Beppe Finessi, architect and professor at the Politecnico di Milano, tells us: “... like that time in the Xerox store, in Milan, the early sixties. “Please, Mr. Munari, do not move the original, otherwise the Xerography will come out bad”. Exactly. Here the use of the forbidden becomes the norm. A machine created to reproduce an original in an unlimited number of copies can instead produce originals, different from one another. [...] All this simply by breaking a rule. Original Xerography, a perfect oxymoron.”

“Munari targets the whole series of prohibitions relating to the photocopier’s use: the instructions not to move the original, or keep the lid open, or place objects on the ‘plate’”, performing a systematic betrayal of the instruction booklet.¹⁹

What should never happen during its operation?²⁰

What are the photocopier’s limits? Or those of a tablet? Or a smartphone? And if these technologies could go wrong?

Testing objects’ limits, the limits of their actions necessary to discover new unexplored territories “in the sense that almost nobody fully exploits the possibilities offered by the world of things, and is limited to a standard, average and often mediocre use”²¹.

17

“With the typewriter you can also write poetry, of course it will be necessary first to train the machine, accustomed to writing words that are too frivolous, such as: posting, packaging, receipt, reference, tot, quid and stamps included. From time to time, between one invoice and another, take a blank sheet and type: algae, doves, silence, heron, echo, wind, childhood”, B. Munari, *Proposal by Munari*, 1950, p.7 on the possibility of derailing machines.

18

Various authors, *Art in Italy after World War II*, Il Mulino, Bologna, 1979, p.75

19

M.Sammicheli, G. Rubino, *Munari Politecnico*, Nomos Edizioni,

20

Various authors, Bruno Munari, *Like that time*, Beppe Finessi, p. 39/42, Mazzota, Reggio Emilia, 2000

21

Various authors, Bruno Munari, *Freedom is the limit. Munari, the art, the method*. Marco Meneguzzo, p. 25/29, Mazzota, Reggio Emilia, 2000



**PHOTOGRAPHIC
STYLIZATION BY
SAM SHAW-S
PHOTOGRAPHS**

A Best Practice from
Czech Republic
by
Educational
department of the
Prague City Gallery

**MEDIA
EDUCATION IN
THE DIGITAL
ATELIER**

AUTHOR

ABSTRACT

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This chapter introduces the relation of the **APP YOUR SCHOOL** project with Media Literacy from its origins to its final implementation through the Digital Ateliers (workshops). An overview of the Ateliers' Key Questions assists in studying the intentions of the partners in relation to their goals and their understanding of Media Literacy. The conclusions present ideas about where and how the Digital Ateliers could open a discourse with media Education concerns.

KEYWORDS

MEDIA EDUCATION

MEDIA LITERACY

WORKSHOP

DESIGN

OUTCOME

MEDIA

Media Education as such was not the core element of this project but there was an abundance of media involved in its workshops and it was mentioned in several key points of the process. An effort to specify this relation, requires to have a look on how it was approached from the initial stages of the programme to the phase of design and application of the workshops in the different countries.

THE EU CALL AND THE PARTNERS

In line with the predefined guidelines of the call (Erasmus+ 2016) the **APP YOUR SCHOOL** application selected two among the horizontal priorities:

- Open and innovative education, training and youth work, embedded in the digital era;
- Inclusive education, training and youth (addressing diversity in formal and non-formal) education and training, developing social, civic, intercultural competences and media literacy).

For this EU call, media literacy seems to be part of a wider set of educational priorities, connected to inclusive education and intercultural competencies while the first priority which addresses innovative education embedded in the digital era, surprisingly does not connect to Media Education or Literacy.

At the same time the premise of the leader in their original project proposal synopsis states that “the interaction between technologies and our life poses to media education and media literacy (as a goal) to penetrate deeper into the creative contexts capable of social and educational challenges.” Technology here is seen as a part of our everyday practices capable of enhancing creative contexts that foster educational challenges. This connects the technological setting of our era to values of Media Education and Literacy while creative situations are meant to be necessary for educational, and thus social challenge. It would be worth underlying here that the project leader consciously dealt with the common ambiguity among Media Education and Media Literacy by including both terms.

The project itself brought together 8 specialized but varied organisations from countries around the EU, three of which were Media experts (Italy, Greece, Poland). Three were attached to formal education authorities (Finland, Turkey, Portugal), one addressed training and networking into non formal education (Czech Rep), one specialized in training in the field of integration and socialization (Lithuania) and finally an associated partner is a University Department, expert in digital technologies (Finland). During the kick off meeting (October 2016, Prague) the presentations of the partners displayed, a wide spectrum of applied, collaborative teaching and learning practices which involved a variety of media but in the writer’s view, were not necessarily coherent in scope and aims. The reason would be the different standpoint to two main factors: their aims for the use of media and their theoretical background, and thus identity.

MEDIA EDUCATION AND DEFINITIONS WITHIN THE PROJECT

Media Education is generally defined as learning about media and developing both critical understanding and active participation (D. Buckingham, 2003, p.4). We also find the widely accepted and similar positions of Buckingham (2005), Bekkhus & Zacchetti (2009) who define Media literacy “as the ability to access media, to understand and to critically evaluate media contents and different aspects of media and to create communications in a variety of contexts.”

Hobbs (2010) adds the notions of “reflect” and “act” towards a social sphere of responsibility which are also of interest to this project.

The project leader expressed the intention to introduce these ideas through the presentation of the project’s external evaluator, researcher P. Fastrez, during the first Trainers’ Training (Bologna, January 2017). This introduction focused on media competences and what a model user of media literacy is, presented definitions of Media Literacy as proposed by researchers (e.g. Hobbs, Bazalgette, Ofcom) during the last 30 years. The presentation titled “Media literacy competences in the Digital Ateliers”, included the following chapters:

1. What is a competence?
2. Defining media
3. Media literacy as competences: a few frameworks
4. Examples of research involving ML competences
5. What ML competences in the Digital Ateliers?

The question addressed was how we can enhance competencies in an educational environment through the use of media by taking into account all aspects (informational, formal, communicative and social). The presentation gradually connected the 6 signpost areas suggested by BFI (Bazalgette 1989) to new factors related to the development of technology (Jenkins et al. 2006): internet exploration, connectivity of young people, non linear network of media producers to consumers and media creators to audiences.

This input was informative and spherical however, in terms of creating a common reference for the partners, the length, the effort to include both history, research and current views made the presentation less effective than it could be for guiding a Media Literacy concept for the partnership. The idea of competencies remained an important element throughout the project but not necessarily connected to Media Education.

THE DEVELOPMENT OF DIGITAL ATELIERS

The leader (Centro Zaffiria) proposed a document with guidelines for designing a DA. The methodology was based on “the teacher guiding an exploration”, in three steps, with interdisciplinary connections and an out of the box attitude towards technology. (*Key Points to keep in Mind to design a Digital Atelier* - pg. 143). For this reason, a “Key question” was demanded for each DA which would offer a condense idea for the whole workshop as such: “summarize here your Digital Atelier using only one question” and later on “How you will present the research you would start in the Digital Atelier? Move each phase starting with a question “. (*Digital Atelier, Sheet for first Proposal* - pag. 144).

As the author has no personal experience of all the 43 workshops (7 countries x 5 plus 1 x 8 DAs), we propose firstly to find out if and how Media Education was incorporated in the DA’s from their most concise expression, i.e. the Key Question. This is indicative both of the experimentation that followed and of the intentions of each partner or specific trainer/designer. In parallel, the writer will extract information from the Full proposal templates and the visual references that accompany each DA.

A CATEGORISATION

Our reading in search of media use, firstly came across the observation that there was a strong interest in specific themes which were mentioned as the main goal of many DAs. For reasons of this study, the Key questions were divided in two sections to discover groupings in terms of themes, media and technology. (Appendix DA TITLES, KEY QUESTIONS AND CODIFICATION, pag.99).

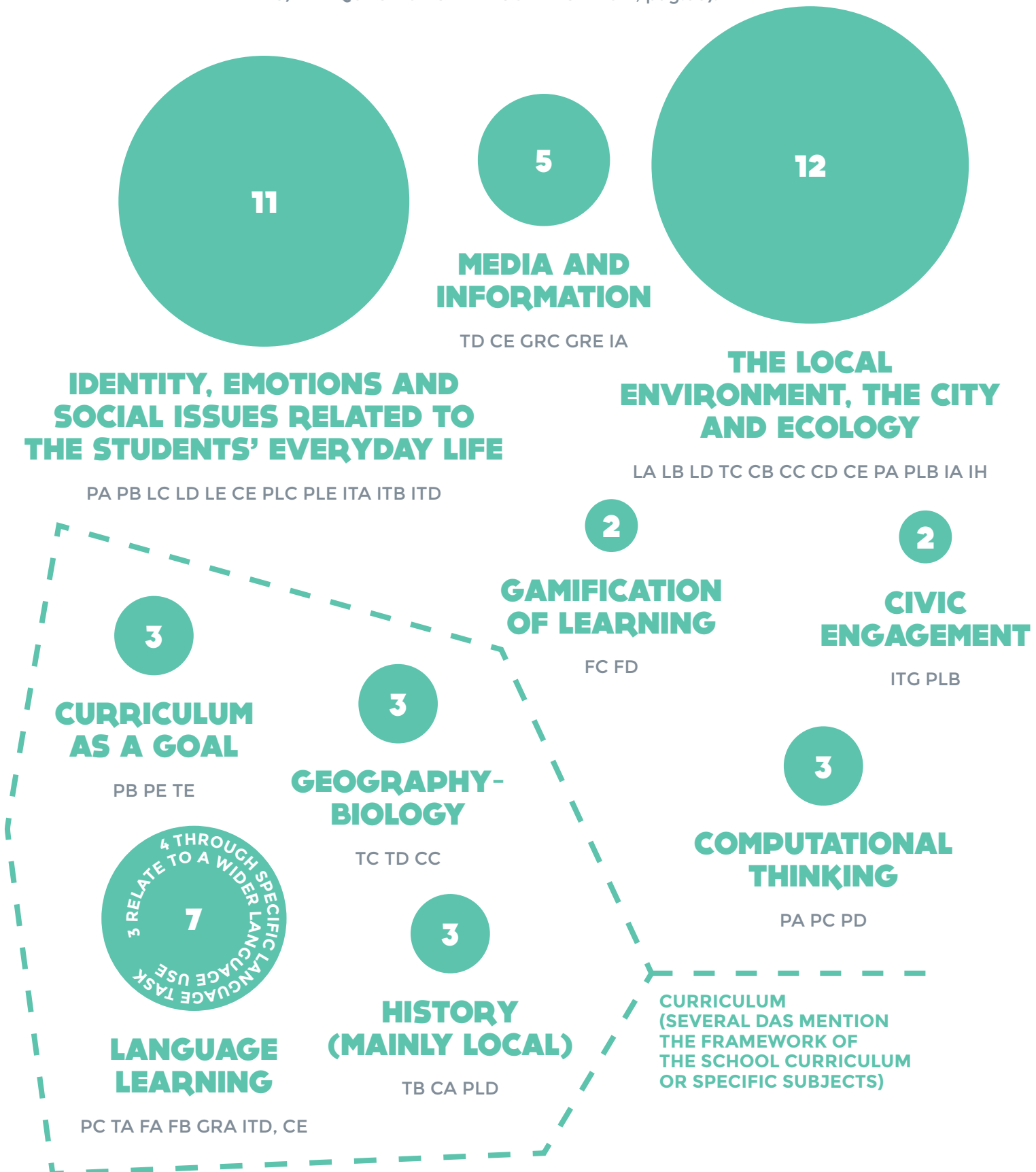


TABLE 1: Goals of Digital Ateliers according to their Key Questions

Media as such and communication are found to be just a small part. The themes, though, show that technology and media are used to approach several subjects in a variety of cultural contexts. The partners worked both in different kind of residential locations, from big cities to villages, and in mixed conditions as far as formal and non formal education are concerned. In addition, partners were free to choose the kind of technologies and media that suited their own local facilities. So the mixture and lack of systematic approach that we see in the table “DA Titles, key questions and codification”, reveals how familiar and multifaceted learning through media can be today in European countries.

In terms of the use of media as a tool for specific goals, we observe that media and technology appear within a broad spectrum. The discussion about when any kind of technology intends to carry meanings and processes that engage in mediation and communication is ongoing and we could not deal with it here.

We will study the specific references of media and technology mentioned in the Key Questions:

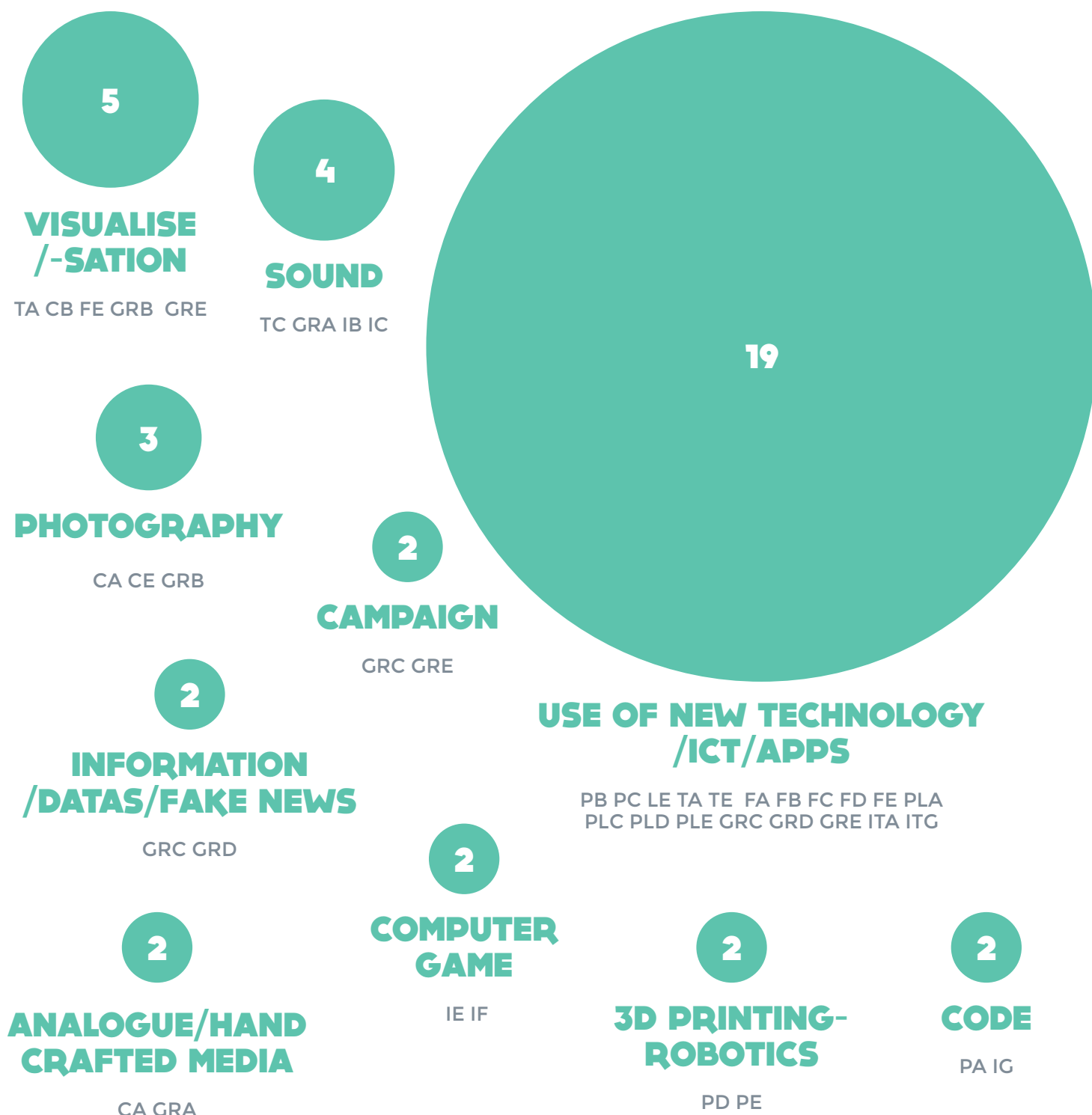


DIAGRAM 2: Use of media in the Digital Ateliers according to their Key Questions

In a few cases do DAs deal with media purely as a communication method such as creating a campaign, hiding and revealing information or using sound as a distinct element of audiovisual language for expressing feelings and messages. Some also try to see storytelling in a critical way: 2 Czech (Cb, Ce), 3 Greek, 1 Portuguese (Pc), 2 Polish (Pb, Pd), 2 Italian (Ia, Id). Five DAs also call for the “visualization” of a theme already from their Key question, showing thus an intense interest for one of the basic features of media which is the visual language and open a discussion on the possible multiplicity of such visions. Finally, -although not evident in the Key questions- only one DA (Pc) uses pre existing audiovisual material (projection of short films) and one (Ca) existing photographic material to initiate a discussion around storytelling. However, the short films in Pc (Virtual Reality – New ways to work storytelling) are screened via VR devices and focus on aspects of how VR stories especially allow variables in looking at a story.

It is not always clear why one device or format was chosen instead of another. But there is a strong presence of “new technology” and Apps which show that the inclusion of these new experiences and processes is still an open issue in countries both north and south of Europe. E.g. both Finland and Turkey worked almost exclusively with tablets on existing commercial/ educational Apps, however in a different context and level.

In general, media were used to:

- record reality and then allow for some kind of editing or further use
- view and/or create information via a device
- use and experiment with devices
- transmit a new message in some form of medium
- simulation

A country based synopsis of the use of media in DAs.

The tables offer also a reading in terms of Partners’ tendencies.

THE PORTUGUESE PARTNER had a background in using coding and high quality hardware (small robots, VR, electronics...) aiming mainly at computational thinking but also collaboration and writing.

THE LITHUANIAN PARTNER used a variety of online open source platforms (Canva, Pixlr, Aurasma, / use of ICT tools, Instagram, FB) for addressing a wide spectrum of social issues.

THE CZECH REPUBLIC PARTNER developed an artistic, often stylised approach combining analogue and digital practices where self and space representation, Point of View and diversity were explored.

THE FINNISH PARTNER focused on using Apps and web based platforms for language learning and development. They experimented with gamification of learning too.

THE POLISH PARTNER combined varied materials and media storytelling techniques with a focus on local society and space.

THE GREEK PARTNER used classic forms (sounds and photos) as well as new technologies (Apps, software and social media) with a general tendency in messages, storytelling and PoV.

THE TURKISH PARTNER focused on applying massive use of tablets with existing Apps for small cognitive tasks in the classrooms.

THE ITALIAN PARTNER, being the project leader and familiar with the proposed methodology, moved easily between analogue and digital activities trying a variety of new interactive technologies for cultural purposes.

The results show that partners had a variety of understandings about:

- media and their combination (still photography, video, new media (apps and software) and programming/ robotics, VR)
- combination of media with other arts e.g. drawing/ painting (Italy, Czech, Greece), crafted constructions (mainly paper-carton), and theatrical elements (Poland, Czech Rep, Greece)
- technological devices as a main tool for experimentation (through trial of existing apps (Turkey and Finland), or new devices as a central experience (robots and VR: Portugal)
- pedagogy (involving non formal afternoon or weekend meetings, formal education and either a closer or less dependent attitude towards national curriculums).

Partners reflected on local necessities and ideas around not only Media Education but also a number of relative notions: the whole spectrum of how media are a tool for developing social and literacy competences, and how certain media are considered more desirable/ necessary than others, what are the connections between analogue, media and digital practices, and what are the possibilities of digital practices within formal or non formal education.

CONCLUSIONS

Most DAs are designed around the idea of using technology and learning through media and not about media and the different agencies involved. Discourse and discussion about the communication process and its forms was rather exceptionally included in the objectives of the DAs (e.g. *One idea many variations*, Gr b), *Self portrait and Identity*, Ce), *Designing Soundscapes*, I b). In addition, deconstructing the medium and questioning its purpose, would be an interesting approach of Media education in the course of the DAs which the leader had originally suggested. This e.g. would mean a more systematic critical attitude about the form and functionality of the Apps used, if and how the uses their producers suggest are unique, expandable or possible to see in alternative ways. There was one case where technology itself inspired a new versatile use (*In the Ocean*, Cc).

Several DAs involved 1. observation or research 2. a hand made process and 3. more than two or three platforms or media. Especially we find this in: *Designing Soundscapes* (It), *Search myself on the web* (It), *Self portrait and Identity* (Ce), *City Fonts* (Pla), *Urban Box* (Ple), *QRcode* (Grd). The big variety of analogue and digital techniques which were often combined in a complementary way, open a path to discovering the qualities of each specific medium in comparison to another and the contemporary multipurpose devices. This passing from one technique to another enhances a transmedia approach which may add to a critical point of view. The author believes that understanding why these processes were chosen, their possibilities and limitations was missing in many cases. The experience however in developing content was rich and inclusive in both forms and outputs. In addition, the play of possibilities of the new media (through navigating and editing, using apps on any device, mixing and mash up styles etc.) assist an unconscious understanding of this networked, quick and non linear aspect of media education. A further study could see into the complementary mode of these educational scenarios to advance students' understanding of the messages involved and the different way they are dealt with in each medium (e.g. students making a fake news item in Facebook, in a poster and in a short video or how point of view and audience interpretation vary from still pictures to quick digital collages).

Generally speaking, access, understanding and creation are served by a large number of the DAs. Access especially is omnipresent in DAs with a great variety of devices or kinds of media and technology involved. The aspect of creation is also very strong as the DA approach is an intense creative and exploratory process, encouraging combinations of both analogue and digital media, hands on and crafted phases as well as a passing from one technique to another. Their interdisciplinary aspect is a strong characteristic and it was inventively combined with the creative processes: from paper to drawing, scanning, recording, listening, gluing, talking to people, looking through a multitude of screens for a variety of purposes, clicking on several platforms, choosing images and shapes, writing short texts, drawing the digital and digitizing hand crafted elements. Some understanding is encouraged. What is not always evident is the critical evaluation and reflexion.

The project mainly aimed at an informed and fresh use of media in order to accomplish an enriched experience through digital activities. These activities had the intention to combine skills developed both within and outside the classroom. Building consciousness about the various agencies and interactions involved among producer, technology, message, genre, consumer/ audience and representation did not appear as a priority, although certain workshops enhanced a critical understanding of media languages, media production and use of the web.

The versatility of these workshops have a potential for Media Education which could be explored at a second stage where structure and critical reading of the chosen methods will be both studied and tried out.

APPENDIX DA TITLES, KEY QUESTIONS AND CODIFICATION

The table presents the DA's performed by each partner country. "Code" was created especially for this chapter to facilitate the reader who would like to search further certain DAs in connection to the tables included in the rest of the chapter. "Tool" deals with any specific media which were considered necessary for arriving at an outcome (goal). "Goal" was the desired aim of each DA as described in the proposal.

AENIE - Portugal			
CODE	TITLE	TOOL/MEDIUM	GOAL
Pa	<i>Dash & Dot - My Learning Companions</i>	How to use technology	To develop computational thinking, problem solving , creativity, become happier, coding with one language, collaboration skills
Pb	<i>Tablets in the classroom</i>	by using technology in the classroom in open curriculum (Use of a variety of applications)	Students well-being
Pc	<i>Virtual Reality - New ways to work storytelling and collaborative work</i>	How to use technology (VR)	To develop computational thinking and writing skills
Pd	<i>3D Printing and 3D creating</i>	Search 3D printing and creating	To develop computational thinking skills
Pe	<i>Mobile Resources on Education: Let`s learn with each other</i>	Robotics as Stem's approach	Connecting all of the curriculum

EDUPRO- Lithuania			
CODE	TITLE	TOOL/MEDIUM	GOAL
La	<i>Transforming My City / Designers of the City</i>		How can we contribute to making our local city more attractive to us and others?
Lb	<i>Eco-Friendly City</i>		how can we make our city friendly to environment ?
Lc	<i>Emotions decoded</i>		Are we the ones to control emotions or emotions control us?
Ld	<i>Mission (Im)possible?</i>		What can be done to solve the problems related to tolerance among socially excluded groups ?
Le	<i>Day in the museum</i>	ICT	Connect or separate us to our parents, grandparents?

ESENLER - Turkey

CODE	TITLE	TOOL/MEDIUM	GOAL
Ta	<i>Play with Words</i>	Using digital drawings?	How can we form simple sentences and words
Tb	<i>Biographies of famous People</i>		How can we teach the famous peoples' life to the students in a permanently.
Tc	<i>Animals' Sounds</i>		How can we teach animals and their sounds?
Td	<i>Let's discover our Body</i>		How can we discover the human body in a more detailed way?
Te	<i>Web 2.0 Tools in Education</i>		How can we use web 2 tools in education?

EUDA - Czech Republic

CODE	TITLE	TOOL/MEDIUM	GOAL
Ca	<i>Photographic Stylization - Old Photos in our Age</i>	Through the media of photography and hand made creation of props and costumes?	Can we reconnect history and the present
Cb	<i>Different Vision of Urban Space</i>		How varied the visual perception of open urban space can be?
Cc	<i>In the Ocean</i>		How big is the impact of contemporary human civilization and its' behaviour on the change of ocean environment ?
Cd	<i>Mapping of the RADOTIN landscape</i>		Do you know the landscape around your hometown?
Ce	<i>Self-Portrait and Identity</i>	By a combination of photo and text and by using different art styles demonstrate the diversity of society?	How can we portray our unique soul, mind and identity

KUOPIO - Finland

CODE	TITLE	TOOL/MEDIUM	GOAL
Fa	<i>Using Kahoot as a Tool for English Language Learning</i>	How to use Kahoot.com	- in learning and revising English vocabulary and structures.
Fb	<i>Padlet at Multidisciplinary Learning of Finnish Language and Literature</i>	How to use Padlet.com	- as a platform in examining the special features of the Finnish language.
Fc	<i>Seppo.io</i>	How can use Seppo.io	- to enhance learning process need with developing serious and learning games?
Fd	<i>Socrative Digital Gallery</i>	How to use Socrative.com	- to enhance learning process need with developing serious and learning games?
Fe	<i>Storybird.com at Multidisciplinary Learning of English Language</i>	How to use Storybird.com as a tool	- in creating a visualized book review

NEW MODERN POLAND FOUNDATION - Poland

CODE	TITLE	TOOL/MEDIUM	GOAL
Pa	<i>City Fonts</i>	Using new technologies?	How to talk about your city and discover it
Pb	<i>Citizen</i>		What does it mean to be a citizen?
Pc	<i>Emotions</i>	With help of new technologies, apps and GIFs?	How to talk about emotions
Pd	<i>Urban Legends</i>	Using new technologies?	How to show city historic legends/ cultural text in a creative way
Pe	<i>Urban Box</i>	Using new technologies?	How to discover the history of family internal migrations in my town

KARPOS - Greece

CODE	TITLE	TOOL/MEDIUM	GOAL
Gra	<i>Soundscapes</i>	Through sounds exclusively?	Can we tell a story?
Grb	<i>One Idea, many Variations</i>		How can an object or concept be visualized in different ways?
Grc	<i>Truth or Dare</i>	Through media?	How easy is it to become fake news victims, build and share your own news campaign
Grd	<i>Qr Codes</i>		How can I hide information and create a campaign?
Gre	<i>Infographics</i>		Can Information and knowledge be presented in a visual way to become more understandable and memorable by a wider audience?

ZAFFIRIA - Italy

CODE	TITLE	TOOL/MEDIUM	GOAL
Ia	<i>AR for Storytelling</i>		How to "Increase the reality" of own school and local community?
Ib	<i>How does your territory sound? Designing Soundscapes</i>		How does your territory sound? What emotions and feelings do you remember from a sound? How to become a designer of a soundscape?
Ic	<i>Colour Matching: Landscape's Colours and Sounds</i>		What colour has a sound? How does a colour sound?
Id	<i>Search Myself on the Web</i>	Through technology?	How to find new images and words to tell about yourself
Ie	<i>Minecraft: interdisciplinary Blocks</i>	Through the videogame?	Is it possible to activate interdisciplinary connection paths
If	<i>Inclusion through Digital Technologies</i>		How many different skills do you need to create a video game?
Iga	<i>QR Stories</i>	Can be hidden in a code?	How much Wonder How to create a new public service made by teenagers?

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CODING AND ROBOTING

A Best Practice from Turkey
by Şehit Sait Ertürk Ortaokulu

**CONTEMPO-
RARY ART,
MULTIMEDIA
AND
INNOVATION
IN EDUCATION**

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ABSTRACT

The purpose of this chapter is to introduce the potential as well as the current and possible future outlook of art, multimedia and innovative techniques in the field of education. The authors aim to offer insight into the potential of discipline fusion and conceptual approaches. At the same time, the perceived limitations of the role of art and media in education are introduced through the arguments of renowned authors in this field. In the following text, the authors introduce the conundrum of relying on modern technologies with absolute trust in the education process. The conclusion of this chapter is that modern technology is to be used as it strengthens the creative side in pupils and students. However, the means of use are absolutely vital and being oblivious to traditional methods of creation is not what we should seek.

KEYWORDS

MULTIMEDIALITY

TRANSMEDIALITY

INTERMEDIALITY

ART

MEDIA

THE TREND

The main trends not only in contemporary art but also in education include interdisciplinarity, intermediality (multimediality, transmediality) and interactivity. These tendencies are not only about art pedagogy and gallery education but also about other school subjects and disciplines.

This text is a combination of two main points of view. Prague City Gallery as the museum of contemporary art has participated in the App your school project bringing a specific approach with discovering new competencies during special practices in unique gallery space: contemporary art, its relationship with the media, technologies and education. Part of Czech digital ateliers was realized by the educational department of the Prague City Gallery - an important Czech gallery (administered by the Prague City Hall), which focuses on modern and contemporary Czech art (20th and 21st centuries). Thanks to its orientation towards progressive art, the gallery provides space for the realization of educational activities with transitions and crossovers to other disciplines, which is, among other things, a significant tendency in contemporary art. The second point of view is situated at Elementary art school Music Art, where were the other parts of digital ateliers realized. Elementary art schools are the type of schools that are a specific part of the Czech educational system (arts education). It is a world-unique network of schools in the Czech Republic and Slovakia that provide the basics of education in several artistic disciplines: musical, artistic, dance and literary-dramatic. There are ideal conditions (compared to classical schools) for the implementation of digital ateliers - it is mainly due to the possibility of sufficient time subsidy and better background (specialized classes with better material and technical equipment).

These mentioned transformations of contemporary art and education (interdisciplinarity, intermediality, interactivity) are influenced by important factors. „Changes in student populations and the visual culture that is forming them are another important influence on this art education reform movement. Teaching visual culture is, more multicultural, interdisciplinary and technological than art education in the past. It addresses a wide range of challenging issues that lead professional artists and students to make powerful visual statements. Fundamentally, it is about art as a form of cultural production and seeks to reveal the creativity (by both makers and viewers) that gives images and artefacts their meanings.” (Mason, Eca, 2008, p. 45)

The basic concept for the character of contemporary times and art is also visual culture. „Visual culture is a focal point for many, diverse concerns, but all have in common the recognition that today, more than at any time in history, we are living our everyday lives through visual imagery [...]” (Hickman, 2005, p. 151)

“However, visual culture has its own pitfalls - above all, the predominance of form over content. Both developments - a visual way of life and culture of self-referential, depthless images - cause much angst among scholars, many of whom [...] deplore the ascendancy of images over words. [...] Postmodern images privilege form over content, signifiers over signification, surface play over narrative, spectacle over characterization and plot.” (Hickman, 2005, p. 152)

CONCEPTUAL ART

In addition to the concept of visual culture, the concept of conceptual art is also used here. Conceptual and post-conceptual art uses overlaps to other disciplines, links art with science disciplines, etc. Here is not an important form, but on the contrary, the content - the concept, the work is often a multimedia character. In the youngest art, video art and the use of new media appear in a creative way, or the work itself becomes a medium in itself - a means of communicating certain important ideas. Interactive works are also typical of 20th and 21st-century art. The viewers are actively drawn and involved in the creative process, they are often co-authors of the work or they react directly to them, for example, in the context of changing movement, voice, body temperature, etc. Artefacts are also intended for gradual completion (e.g., visitors' works, etc.) sometimes. Just the fact that each viewer interprets his work of art with his unique angle of view, is illustrated by the fact that they are, in the broadest sense of the word, the co-creators of the work in question. Conceptual dimensions are a typical attribute not only for contemporary art but also for education. Just as in contemporary art, content, idea and concept is more important than perfect form and craftwork, similarly to art pedagogy: „The goal of art education ceases to be merely the creation of an aesthetically impressive work, but rather a testimony that, besides the form of a material artefact, can also take the form of a work of action, interactive, multimedia or intermediate.“ (Babrádová, 2007, p.11)

It is often not the creation of the resulting physical work and the resultant artefact, but the process, course, development, action, multimedia output. The key current features and attributes of art and education are therefore essentially the same - they mirror and copy each other, they use similar ways and means, there are many similarities, but also some differences. „Contemporary artists and art educators in general work in interdisciplinary, artistic contexts applying and combining different modes of expression.“ (Mason, Eca, 2008, p. 198)

However, the fields of art and education have consistently been reflected throughout history. Art always reflected and captured the world around us, one of the sources of knowledge. „In earlier centuries artists were seen as contributing to the whole spectrum of human knowledge by picturing human and non-human spheres of existence in iconic, indexical and symbolic images. Artists produced visual and spatial images and narratives that were modes of analyzing and describing the world - showing us different aspects of the world, how human beings are in the world, what we do and how we think and feel about ourselves and the world about us.“ (Hardy, 2006, p.79)

Art and science connect the world we live in. „The ‘same reality’ that links art and science is life itself and the world we inhabit.“ (Hickman, 2005, p. 85)

INTERDISCIPLINARITY

Inter-professionalism and related project teaching is the ideal platforms for acquiring knowledge in broader contexts and deeper contexts. It is a highly effective way of teaching when pupils get comprehensive information about the issue in the context of larger projects. Incorporating new media into learning is, in turn, an attractive way to make content accessible to pupils and students. Current technologies, not just the information, break the barrier of technological complexity in different areas and thus open up the possibility for pupils to use this potential adequately. Pupils are in daily contact with them in their personal lives, and therefore their engagement in teaching is logically the next step in which a learned educator can make the most of the possibilities of new technologies for the delivery of educational content. Ideally, it can inspire and lead to reflection on their existing use beyond school. It is important to be able to use popular channels, networks and media to mediate important topics. At the same time, it is important to inform them of the dangers and pitfalls on the Internet and social networks. An interactive way of teaching primarily develops creative thinking, which is an important foundation for all disciplines. Creative thinking is beneficial for the study of many disciplines and for the performance of most professions - non-artistic, scientific and technical (for example, scientists, doctors, architects, lawyers). These learning methods also better fix the memory information: „The history of interdisciplinarity, in the sense of the practice of the natural interconnection of artistic expressions, extends to the very beginnings of the emergence of art. Individual artistic species existed already in the prehistory of interconnection and only the strengthening of the representative function of art was the reason for their gradual separation. Until the turn of the 19th and 20th centuries, individual art began to interconnect again and the nature of a number of avant-garde works had an intermediate character, although this designation for interdisciplinary artistic expressions appeared only later - in the 1960s. In the field of art pedagogy, the interdisciplinary manifestations began to enter more systematically only at the beginning of the nineties, when the dialogical character of artistic creation.“ (Babyrádová, 2014, p. 34)

The development of interdisciplinarity in art and education is closely related to multimedia creation: „Contemporary art scene dominates multimedia art. This is an absolutely natural consequence of the tendencies that strive to overcome the boundaries between artistic species that have been enforced at the very beginnings of avant-garde art. [...] It has greatly contributed to the abolition of the boundaries between artistic Dadaism [...] and the whole process culminated in the second half of the 20th century.“ (Bláha, Bláhová, 2014, p.147)

The current integrative theoretical tendencies adequately reflect the area of pedagogical practice: „We are responding to the growing influence of current theoretical tendencies in the field: there are tendencies of interdisciplinary and integrative approaches of contemporary educational directions [...]. The discourse of art and education is currently addressed by an interdisciplinary field in which influences from the fields of philosophy, semiotics, cultural anthropology and gender studies are influenced.“ (Fulková, 2001, p.7)

The interaction between disciplines is a kind of parallel to interaction and communication among people: „As well as the emerging forms of interaction between humans, similar interactions occur between the fields. Interrelationships between fields then take place in practice - in specific cases, often quite spontaneously and spontaneously. This is how the theory reacts to the situation in the discussions about the newly-formed practical changes and begins to use new tools to reflect this situation in the form of transdisciplinary discourse. As far as the relation between the individual disciplines in contemporary art is concerned, today's time is characterized by the fact that, of course, we are moving between the languages of different types of art. We find ourselves in situations where it is very difficult to assign one piece to one or another type of art.“ (Babyrádová, 2013, pp.13-14)

One of the current forms of education is the so-called Intermediary Workshop: „The intermediate workshop, the most striking feature of which is the natural intermingling of various media - means of artistic expression [...], is one of the earliest forms of education practised in arts and arts and pedagogical schools.“ (Babyrádová, 2005, p.144)

The current curriculum of the tendency mentioned above, including so-called “project teaching”, adequately reflects: „It is gratifying that the current curriculum calls for transdisciplinary overlaps and the creation of educational projects that would naturally bring together the knowledge of different disciplines and their different cognitive practices. [...] The isolation of individual educational disciplines can effectively overcome the thoughtful interconnection of educational contents, in pedagogy solved both theoretically and as a problem of inter-subject relations

and project teaching. The new curriculum does not only support the integration of educational content but formally, integration also creates a combination of individual disciplines in wider learning areas. [...] The basis of integrated teaching and the demanding task of teachers is, therefore, to find and develop specific themes that can be opened from different subject-matter perspectives and to link them to projects.“ (Šobá ová, 2015, pp.14-15)

Project implementation and so-called project teaching is, therefore, a concrete fulfilment of the vision of interdisciplinary use and the overlapping of various disciplines in teaching. It is, therefore, an effective tool for applying these theoretical tendencies to teaching and pedagogical practice: „One of the possible tools for conducting active creative learning is the principle of project teaching. Project teaching is based on the solution of complex tasks - problems, through active student activity.“ (Raudenský, 2009, p.82)

The ideal area for the realization of interdisciplinary overlaps is the subject of art education, which is a crossroads, where an unlimited number of paths can be encountered and their borders can easily be crossed. Art and literature can be taught, for example, literature and linguistics, biology and chemistry, ecology and the environment, history, geography, mathematics, multicultural education, civic education, basics of social sciences, or transcendence to photography, film, and theatre, etc. The attribution of art education is creativity and flexibility, so that it can be easily linked to other objects and adapted to their needs and parameters. „The design method applied in the sphere of art, but also with the creation of only remotely connected activities becomes a means of environmental, multicultural and intermediary creation. Its advantage is that it can become a connecting bridge between artistic and non-visual disciplines and the interconnection of these disciplines is always part of a creative act that we cannot imagine without multidisciplinary.“ (Babyrádová, 201, pp.74-83)

Within the framework of art education combined with other fields using new media, many types of literacy can be successfully developed - e.g. visual, digital, media, literary, emotional, etc. „Visual literacy is increasingly important because of ICT but the concept must be redefined. Strategies for teaching literacy and developing a critical understanding of the new modes of cultural production are needed in post-industrial societies. These competencies must be developed in formal schooling to the same standard as traditional ones. The term ‘multiliteracy’ refers to the skills people need to understand current forms of multimedia communication and the way social, economic and institutional power structures network to breach the divide between experience inside and outside of a school. It implies a critical literacy that enables dynamic relationships between praxis and systematic thoughtful understanding.“ (Mason, Eca, 2008, pp.121-122)

ART AS A MEANS OF EXPRESSION

Art education is also an appropriate means of integrating disadvantaged (disabled or socially excluded and excluded) persons or people who do not know the language of the country. Art is an international universal language. It is a specific, unique and autonomous communication system, where you can communicate through visual characters and elements. The essence of the outputs within the subject of art education is also originality, uniqueness, freedom, own approach, manuscript and style. This openness and clarity of the artistic language thus fulfil the vision of the availability of art to all - regardless of their origin, belief, education, social inclusion, etc. "Culture is a basic human right" (INSEA, 2018), as it 's highlighted in the INSEA (International Society for Education through Art) Manifesto.

Linking art theory and practice is a challenging platform for the development of many areas. „The combination of art theory and practice, therefore, serves to develop a sense of inquiry, an ability to take practical and intellectual risks, to be conscious of decision-making in a reflexive manner, to seek for and evaluate creative responses in self and others, to be able to articulate reasons for preference, qualitative judgments, or comparative aesthetic values, and engage with art and nature in the public word“ (Hardy, 2006,pp.17-18)

„Art and other subjects serve to develop proactive, creative thought and action, sensitivity to difference of approach and outcome, e.g., gender, culture, ability, age, etc., a flexible understanding of changing values in different societies and periods, the ability to use a specialised vocabulary effectively within other forms of communication, a broad view of what constitutes culture and pleasure and satisfaction in such forms of life.“ (Hardy, 2006, pp.17-18)

In spite of the arguments mentioned above, art education is not devoted to many countries of such attention and space as it deserves. It is often considered a second-rate subject. With the current society, which we can regard as a "society based on visual features, information and communication" (Fulková, 2008, p.196), has something to offer. "Thus, arts education in a semiotic sense can be presented as a subject of comparative importance, such as languages. " (Fulková, 2008, p.196)

NEW MEDIA

Involvement of new media into education has gradually begun in education not only at technical but also at art schools in the fields of graphic design, photography and graphics, where the demands for the teaching of these disciplines were logically required. „Graphic art [...] has been inseparably linked to the development of technology from the very beginning. What has happened in the past is of course also true today, at the time of the general digitization, when the computer's ability to integrate the image, movement and sound gained graphic art of a multimedia character. The younger generation of visual creators perceives this constant shift in different stimuli as a natural part of everyday experience.“ (Raudenský, 2009, p.80)

At present, multimedia education is a matter of course, and in most subjects, it is commonly used in various types of schools. Developing new methods and ways to use ICT effectively and meaningfully in education. The main medium remains the computer, but even more, possibilities are being used. „Along with the computer as the leading media technology comes a surplus of control. Next Art Education's focus is on the cultural techniques that are necessary to deal with this.“ (Mateus-Berr, Götsch, 2015, p.91)

There are various projects where new ideas and questions arise. „The project team understand the computer as a flexible, creative medium rather than a static machine. Overall it addresses two linked questions. First, how to integrate digital media creatively into arts education in schools in a holistic, interdisciplinary way and, second, how to effect more practice-oriented initial art teacher training at university level.“ (Mason, Eca, 2008, p.132)

„It proved that digital media can be used to facilitate interdisciplinary media art education in a project-oriented context at the elementary school level. Aesthetic forming processes brought together drawing, painting, text and animation as well as the development and communication of stories. The project has shown that integrating digital media into art classrooms opens up new possibilities for learning. Working in centralized computer rooms with inflexible scheduling and immobile equipment and single workplace systems is not the answer.“ (Mason, Eca, 2008, p.137)

Increasingly, mobile phones or tablets are included which, for their multimedia character (integrated camera / video camera, recorder, player, etc.), for the use of various applications and, last but not least, for ease of manoeuvrability and portability, are instruments that, under the competent leadership they can be very effective.

The new media and its tools bring endless benefits, in many ways make teaching easier and more effective, but their use also has its own pitfalls and negative impacts. Teachers should constantly be educated in this area if they want not only to take advantage of their strengths, but also to draw attention to the weaknesses and threats. „If we want to eliminate the limitless admiration for digital media, we should learn how to work with them. Where else better than at school? If we understand art education as an opportunity for pupils and students to react to the world around us, it is clear that art education must offer the right tools to reflect all reality, including the reality of the media world. The computer is one of the tools for creating visual information and communication, so we have to offer students the opportunity to learn how to work, understand and create visual communication. The computer cannot and must not replace the classical art techniques; it only stands next to them as an equal partner expanding the range of artistic means.“ (Švr ek, 2009, pp. 93-94)

The uniqueness and specificity of art education create great potential for the integration of multimedia into teaching and learning. „The enrichment of arts education with multimedia resources is closely related to the new sense of art education as a unique subject with unique cognitive and communication content.“ (Švr ek, 2009, p.94) The use of new media and applications in teaching can increase the attractiveness of the art subject as a whole: „It is certain that if a teacher can incorporate new methods using new technologies in addition to existing methods in art education, this connection can only benefit the development of the popularity of art education as an object.“ (Švr ek, 2009, p.94)

Avoiding the media as well as seeing the only negative aspect of their nature would not be the right decision. „An art education that neglects any page and the possibility of using these new means of expression, the pupils suffer from experience and various creative experiences. None of the creative possibilities should be neglected. Since computers are more than pencils to our lives, we must not overlook them. But it would be a mistake if we forgot about pencils, colours, or ceramics.“ (Švr ek, 2009, pp. 93-94)

CONCLUSION

New media and technologies are constantly evolving, shifting their options and also posing new questions and topics for discussion. Opinions of their supporters and opponents are constantly confronted with opinions, euphoric and apocalyptic visions. All these phenomena, advantages and threats reflect art - not only art but also films, literature, etc. Art has been and will always be a reflection of society and current topics and is, therefore, one of the important ways to get to know the current world and has their well-founded place in formal education.

Today's artists like artists in history try to find their own way of expressing ideas and attitudes towards the world around them, while opting for the past, they have the opportunity to use the unprecedented wide range of means to achieve them. And so coexist works of various forms, from purely traditional to highly multimedia and interactive. In spite of the plurality of forms, their content and their views on what is contemporary art, the essence of art remains the same - and that is the creation. A creation that can relate to a variety of themes and new media to achieve a variety of forms. Consequently, art education in connection with contemporary art and technology is the space where a student pupil or user of new media can become a pupil-maker. Therefore, lead from passive to an active approach to technology. It is also necessary to inform about the negative impacts of new media and, above all, social networks.

Despite all possible threats, new media remains a valuable opportunity and a feasible option for making learning. It is a more attractive and creative way how to effectively communicate quality content and clarify important themes to pupils and students.

Digital ateliers implemented in the Czech Republic were oriented towards art education and gallery pedagogy and their spillover to several fields and subjects: biology, ecology and the environment, photography, history, literature and linguistics. These digital ateliers and all digital ateliers in common, it can successfully develop many types of literacy in children, pupils and students: not only visual, literary and emotional literacy, but also digital and media literacy. It can also develop communication skills and key core competencies. These digital studios contribute to the development of visual literacy and sensitivity of the participants in terms of better decoding of visual images around us that can be manipulated in the news, advertising, eventual propaganda, etc. Strengthening visual literacy can, therefore, play an important role in the development of civic engagement, in which it's desirable that every person is able to orientate himself correctly in a very fast and visibly saturated environment of our globalized civilization. During its implementation, most of the goals were met. The project App Your School shows, that a combination of the use of classical art with the involvement of new media is very important, useful and it has great potential. Thanks to it, education can be more attractive, interesting and effective. Concepts of digital ateliers were trying to keep up with the availability aspect - that is, working with materials and technologies that are financially and universally accessible to as many schools as possible. There were found many various ways for the beneficial and creative use of new media in education. All the existing parts of the project - the concept, realization and evaluation of the so-called "digital ateliers", model six-hour workshops, have been fulfilled, thanks to which the effective use of ICT and new media in teaching and gallery education can be developed. All these things together are the added value that contemporary art brings to digital ateliers.

Interdisciplinarity, intermediality and interactivity are trends that, as has been said, resonate not only in contemporary art and art education but also in other areas of education. To further enhance the potential of new technologies in learning, teachers' experience of mutual interchange of experience not only in the implementation of new practices in a creative way, as is the case with App Your School, but also, for example, sharing experience with testing, selecting and evaluating applications, or even collaborating on their own development.

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**THE
NEVER-ENDING
STORY
OF STUDENTS
ABILITIES**

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ABSTRACT

This chapter introduces theoretical and empirical perspectives on the relationship between digital media, media literacy and civic participation. These perspectives are used to frame the qualitative analysis of the way teachers participating in AppYourSchool's Digital Ateliers (DA) evaluated their students' experiences in them. The analysis presents answers to the following three questions: what skills did students make use of? What were the main outcomes for them? and how did the Digital Ateliers succeed (or not) in generating these outcomes?

KEYWORDS

COMPETENCES

SKILLS

PARTICIPATION

TEACHER EVALUATION

QUALITATIVE ANALYSIS

DIGITAL MEDIA LITERACY AND CIVIC PARTICIPATION

The literature on the relationship between youth, media, media literacy and civic participation is both abundant and scarce: theories abound, empirical results are rare. From a theoretical standpoint, scientific, political and institutional discourses alike point to a strong potential of digital media towards the development of a more democratic, more participative, more inclusive society. Yet one needs to be careful not to fall prey to technological determinism, as there exists little evidence of the impact of technology alone on a massive investment of the population, and youth in particular, in mediated forms of civic life (Papaioannou, 2013). In an attempt to clarify the relationship between media and participation, Carpentier (2015) distinguished participation from access and interaction. Whereas access is defined in terms of presence of media in one's environment, and interaction in terms of socio-communicative relationships established with and through media, participation involves power and decision-making on and with media. In brief, Carpentier argues that while media access and interaction are preconditions for participation within and through media, they are necessary but not sufficient conditions for participation.

Additionally, the emergence of digital media has been associated with the development of alternative ways for young people to engage in society. For example, Bennett (2008) described how youth civic engagement shifted from the traditional model of a dutiful citizen—emphasizing participation in political institutions and knowledge about government and politics—to the model of an actualizing citizen identity—stressing “volunteer activities, local and online community engagement, youth philanthropy, social activism, political consumerism and lifestyle politics” (Papaioannou, 2013, p. 4). These new forms of engagement, which rely heavily on digital media, represent the integration of participation and self-realization, where civic engagement and the production of one's identity feed one another (Denouël, Granjon, & Aubert, 2014).

From this perspective, the AppYourSchool Digital Ateliers can be seen as an attempt to bring students from access to participation, and to actualize their citizen identity.

As the mere ubiquity of digital media does not per se guarantee universal civic participation, media literacy can be considered as a good candidate to convert the potential of digital media into participative practices. In its seminal formulation, media literacy was historically defined as “the ability of a citizen to access, analyze, and produce information for specific outcomes”¹ (Aufderheide & Firestone, 1993, p. v). The wording of this definition is important. On the one hand, ‘ability’ points to the potential dimension of media literacy: it defines what individuals are able to do, not just what they do. What kind of ability? We will get back to this later. On the other hand, individuals are designated as ‘citizens’, drawing a clear connection between media literacy and citizenship. Extending this idea, Hobbs augmented the classic definition of media literacy with a reference to social responsibility and social action, adding two components to “access”, “analyze” and “create”:

REFLECT on one's own conduct and communication behavior by applying social responsibility and ethical principles

TAKE SOCIAL ACTION by working individually and collaboratively to share knowledge and solve problems in the family, workplace and community, and by participating as a member of a community” (Hobbs, 2010, p. vii-viii, my emphasis)

In this definition, media literacy appears to come in support of the self-actualizing citizen. Jenkins and colleagues (2006) also noted how new forms of literacies were required to fulfill the promise of participatory cultures², and to help overcome three of the challenges of our networked society:

THE PARTICIPATION GAP

The unequal access to the opportunities, experiences, skills, and knowledge that will prepare youth for full participation in the world of tomorrow.

THE TRANSPARENCY PROBLEM

The challenges young people face in learning to see clearly the ways that media shape perceptions of the world.

¹ Many different versions of this canonical definition exist in the literature, but Aufderheide's version is most often referred to as the original one, and all include the three distinct components of access, analysis/evaluation, and creation/production.

² “A participatory culture is a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices.” (Jenkins, Purushotma, Clinton, Weigel, & Robison, 2006, p. 3)

THE ETHICS CHALLENGE

The breakdown of traditional forms of professional training and socialization that might prepare young people for their increasingly public roles as media makers and community participants.” (Jenkins et al., 2006, p. 3)

Compared to the theoretical landscape that has just been (too) quickly evoked, the literature presenting empirical results documenting the actual contribution of media literacy to civic participation is very limited. The available results mostly concentrate on variables that constitute proxies for actual measurements of participation: intentions or self-reported behaviors. For example, Hobbs and colleagues (2013) found that the self-reported intent to participate in civic engagement of high school students could be predicted by their self-reported positive attitudes about the news, self-reported media literacy competences, and self-reported in-class video pre-production experience. Similarly, in a quasi-experiment with 400 high school students, Martens and Hobbs found “[p]articipation in a media literacy program was positively associated with information-seeking motives, media knowledge, and news analysis skills. Moreover, information-seeking motives, media knowledge, and news analysis skills independently contributed to adolescents’ [self-reported] intent toward civic engagement.” (Martens & Hobbs, 2015, p. 120). Additionally, Kahne and colleagues concluded from a survey involving two large samples of high school students and young graduates that “[self-reported] digital media literacy education is associated with increased [self-reported] online political engagement and increased [self-reported] exposure to diverse perspectives” (Kahne, Lee, & Feezell, 2012, p. 1). Finally, in a quasi-experiment involving 239 university undergraduate students, Mihailidis (2008) found that students enrolled in a media literacy class both increased their critical understanding of the media and developed cynicism and negativity about the role of media in society. He concluded that media literacy curricula should not stop at teaching critical analysis of media, and should promote active citizenship.

In the perspective of these results, the AppYourSchool seems to pursue this recommendation, by putting students at work, calling upon their digital skills and offering them ways to act within their community, at different scales, from their classrooms to their extended social environment.

AN ANALYSIS OF THE TEACHERS' AND EXPERTS—EVALUATION SHEETS

The remainder of this chapter provides a look at the AppYourSchool project through the lens of what the teachers involved in the Digital Ateliers said about them after the fact. An inductive thematic content analysis of the 'Teachers and Experts Evaluation Sheet' filled out for the 43 completed Digital Ateliers (DA) was completed. QSR Nvivo 11 Pro, a qualitative data analysis software package, was used to code the evaluation sheets. As the Digital Ateliers were designed and implemented in different ways, depending on the national contexts and partners involved, the analysis examined recurring themes as much as it sought to document the diversity of issues in the teacher and expert evaluation sheets.

The analysis presents answers to the following three questions: what skills did students make use of? What were the main outcomes for them? And how did the Digital Ateliers succeed (or not) in generating these outcomes? As for the empirical literature cited in the first section of this paper, the answers to these questions provided by the analysis need to be taken for what they are: interpretations based on indirect data, consisting in the teachers' perceptions of the DA.

WHAT SKILLS DID THE STUDENTS MAKE USE OF?

The idea of youngsters being “digital natives” (Prensky, 2001), naturally competent to use digital technology, has been nuanced by a number of research works. For example, in the context of internet use, while they appear to master operational skills (such as operating a web browser), youngsters seem to be lagging behind their elder counterparts in terms of information skills (e.g. defining one's information needs, searching for and evaluating information) and strategic skills (i.e. making decisions and taking actions to accomplish one's goals with digital media) (van Dijk & van Deursen, 2014).

At this point it may be useful to distinguish between competences and skills. Whereas skills refer to abilities involving the simple reproduction of learnt procedures in ways and contexts that are similar to those in which they were assimilated, the concept of competence (Scallon, 2004; Rey et al., 2012) refers to the ability of the individual to engage intentionally in relevant courses of action in complex, novel and non-stereotyped situations, by drawing on their knowledge, skills and attitudes, and on the external resources available in the situation. In short, if digital media literacy is defined in terms of competence, while the technical know-hows of students may be described as skills, they do not qualify as full-fledged media literacy competences.

How competent are the students who participated in the Digital Ateliers? It is difficult to say without access to extensive observational data, or advanced assessment instruments, neither of which were available. However, the feedback from the teachers allows us to identify what types of extracurricular skills-as-resources students made use of, and how the design of the Digital Ateliers pushed them to collectively make use of these skills in ways that would foster their critical and creative media competences and support forms of participation.

As a matter of fact, teachers emphasized how students made use of a whole array of technical skills pertaining to the use of digital technology: from smartphone and tablet use to photo and video editing, to online search, to video gaming, etc. However, in line with the literature, a number of teachers pointed out that these skills were basic, and sometimes unevenly distributed in groups. Nevertheless, in the majority of countries where DA were experimented, teachers also noted their students' ability to explore new tools and learn to use them on their own, thereby extending their skills. Teachers also noted that the extracurricular abilities their students used exceeded ICT-related skills, and included a variety of broader, more generic competences (e.g. collaboration, problem-solving, reading, writing, orality, or artistic skills). Finally, the Digital Ateliers seemed to have allowed students not only to put their skills to use, but also to showcase them to their classmates, and in some cases to discover them for themselves, and/or to improve them as a results of their participation in the Digital Ateliers.

WHAT OUTCOMES DID THE DIGITAL ATELIERS YIELD?

One may look at the outcomes of the Digital Ateliers in terms of the evolving relationship that participating students develop with technology, with their environment, with school, and with themselves.

The different DA appear to have impacted the student's relationship to technology in different ways. On the one hand, some teachers stressed how the DA gave students the opportunity to try new apps and acquire knowledge about technology. On the other hand, other teachers highlighted how the DA encouraged divergent or creative uses of technology. This difference reflects a tension between two views of digital media literacy:

- a functional view, in which individuals are expected to comply with technological innovation, and use technology in instrumental ways to accomplish their goals ;
- and an extended view, in which compliance is supplemented by inventivity, and individuals are expected to be creative and critical in their uses of technology (Collard et al., 2017)

It is probably in the ways in which the DA affected the students' relationship to their environment that their participative dimension can mostly to be found.

First, the DA allowed students to acquire knowledge about their environment, be it their natural environment (e.g. its biodiversity in the *Eco-friendly city* DA in Lithuania) or their social environment (e.g. *Citizens* DA in Poland), requiring them to establish a relationship with inhabitants of their town, or to develop forms of intergenerational cooperation ("Lesson in the museum" in Lithuania).

Second, students contributed to their social environment by making their own work visible to their community, either through exhibitions, or online, which, as one teacher noted, provided an occasion to learn that sharing supports gaining new ideas and insights from others.

Third, and maybe most importantly, several DA confronted students with alternative viewpoints on their experienced world, for example by comparing their personal productions (*Self-portrait and identity* in Czech Republic), using media to produce alternative perspectives on their city (*City Fonts* in Poland), explore alternative ways of perceiving reality (*Different visions* in Czech Republic), or considering alternative interpretations of captioned images ("Five ways" in Greece). This is an important avenue for media literacy development, as each of these instances are occasions for students to develop a critical understanding of how "media shape perceptions of the world" (Jenkins et al., 2006).

Regarding the students' relationship to school, some teachers mentioned how the Digital Ateliers, by bringing them to do things not usually done in the classroom, may have motivated them to engage in school activities.

Finally, teachers noted how the DA affected the student's relationship to themselves, by providing them with an opportunity to express themselves and to experience the pride and pleasure of personal success, but also to question their own beliefs and explore their own identity.

HOW DID THE DIGITAL ATELIERS PRODUCE THESE OUTCOMES?

The main properties of the DA (as a pedagogical process) that were mentioned by teachers in connection with their outcomes can be grouped into four classes.

Among them, the fact that students enjoyed the activities and were motivated by them is the most often cited (and it is mentioned in every national context).

Second, most teachers shared the impression that the DA both promoted and highlighted the creativity of participating students (although the evaluation sheets do not make clear how teachers define creativity, a difficult concept to circumscribe).

Third, teachers emphasized the importance of group work (or in some instances peer work) in the DA. Some of them noted how this collective dynamic worked well in combination with the fact that skills that were useful to the DA were unevenly distributed among students, allowing them to learn from one another, and some to mentor others. Other teachers noted how group work in the DA stimulated shy students and revealed their skills, which may otherwise have gone unnoticed.

Fourth, teachers from all national contexts highlighted how the DA's learner-centered approach favored active learning, albeit in a number of different ways:

- Learning by doing was cited as a major factor for the DA's success in five out of eight national contexts.
- The way learning was adapted to each student, and each student could make choices, learn at their own pace, and take responsibility for what and how they learned was cited in three national contexts.
- The possibility to learn by trial and error, in a supportive environment where students needed not be afraid to make mistakes was also cited in three different national contexts.

Finally, teachers noted how the confrontation with real life situations outside out the school walls fostered authentic learning, and opened up a space for discussion about the students' environment, which represents a strong opportunity to change their relationship to said environment, as discussed above.

This enumeration may cause the impression that the DA. Of course, some teachers also noted factors that acted as impediments in the unfolding of the DA. For example, two partners (Lithuania and Greece) reported that students were, at least initially, confused by the DA, as it represented non-habitual practices in the classroom, and did not require them to follow the common school rules. Another partner (Italy) noted how some students did not see their media practices (e.g. video gaming) as related to any valuable competence, an attitude that may be reinforced by some teachers dismissing passion-based activities in the classroom as "just play". Finally, another partner (Czech Republic) observed that the students' media productions did not always meet the teachers' expectations in terms of artistic quality.

CONCLUSION

Mihailidis and Thevenin (2013) described how media literacy could support engaged citizenship in a participatory democracy, by producing critical thinkers, creators and communicators, and agents of social change. Based on the feedback from participating teachers, DA seemed to be at their best when they propelled the students in these three roles, by capitalizing on the students' extracurricular skills, and allowing them to share and improve what they knew about digital technology, to express themselves in public space and to engage with their community.

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**ACTIVE
CITIZENSHIP,
CIVIC
ENGAGEMENT
OF YOUNGSTER
IN THE FINLAND
EXPERIMENTATION**

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ABSTRACT

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Important outcomes of the **APP YOUR SCHOOL** project are Digital Ateliers (DA) where pupils learn among other skills civic engagement and active citizenship. This chapter studies how DA improve civic engagement and active citizenship skills, in particular in the Finnish experimentation.

KEYWORDS

CIVIC ENGAGEMENT

ACTIVE CITIZENSHIP

MUNARI&MANZI PEDAGOGY

ASSIGNMENT

Active citizenship, civic engagement of youngster and the Digital Atelier.

QUESTIONS:

1. Did the students participation in DA reinforce their active citizenship and civic engagement? If yes, describe which capacities were reinforced and their context at Munari & Manzi pedagogy.
2. From the teachers point of view how did the DA reinforce students' active citizenship and civic engagement skills? How can these skills be applied in the classroom ?
3. What methodology did the teachers use at reinforcement of civic engagement and active citizenship and are they visible at school's learning environment and general school activities?

GENERAL BACKGROUND

Digital teaching and learning and the use of technology are completely integrated to the Finnish core curriculum and its applications in different municipalities in Finland. **APP YOUR SCHOOL** Digital Ateliers were executed in two schools of the City of Kuopio, Nilsia upper secondary school and Juankoski secondary and upper secondary school.

The basis of integration of technology in Finnish classroom starts from the early classes 1 and 2 (7-8-year pupils). During these years pupils learn the basic digital skills. The objectives of these two classes are for example how to turn on and off the computer, how to use a personalised username and password and how to log in to and log out of the applications. In addition, the pupils are taught to recognize different digital hardware and understand their function. Furthermore, the pupils are introduced to basic programming and to expressing his/her own experiences on the use of digital media.

Integration of technology in Finnish classroom is taken to a more advanced level during classes 3 to 6 (9-12-year pupils). During these years pupils learn more advanced digital skills. The objectives of these four classes are to deepen the pupils' knowledge of the use of different hardware, software and services and understanding of their use and functioning logics. Furthermore, at 12 years the pupils are able to use the keyboard fluently, capable to produce digital text and edit it and work on folders and in the digital environments of the school. In addition, pupils are able to create and edit pictures, sound, videos and animations as well as present information through tables, diagrams and presentation programmes and platforms. Classes 3 to 6 also provide the pupils with plenty of skills while working in group as well as deepen their programming skills.

Integration of technology in Finnish classroom is taken to an advanced level during classes 7 to 9 (13-15-year pupils). During these three years pupils fulfil their advanced ICT knowledge and digital skills. After the 9th grade pupils are fluent and autonomous at applying different hardware, software and digital learning tools. Production, editing and sharing of documents, tables and graphics is fluent and pupils have also introduced themselves to the use of layout programmes. After 9th grade the pupils' skills to create, edit and transmit pictures, sound, videos and animations are at an advanced level. Secondary school also deepens the pupils' skills at programming as well as at network architecture. Learning is conducted in different subjects (language classes, natural sciences and technology classes) as well as through individual and class exercises.

ACTIVE CITIZENSHIP DEFINITION IN THE LITERACY

Youngsters should have growth into active, responsible, and enterprising citizens.

The students should be guided to act in a pluralistic society that understands diversity and respects human rights and equality in accordance with the values and principles of democracy. Taking part in voting is an important way of active citizenship.

Students should have a knowledge base of how the society works and how citizens can be involved as well as to encourage pupils to become independent societal and economic actors.

Skills in participation and involvement as well as a responsible attitude towards the future.²

MULTILITERACY LINKED TO ACTIVE CITIZENSHIP

The Digital Ateliers developed in the project are from various areas of life and skills. The subjects of Digital Ateliers are not purely from the sphere of definitions earlier of Active citizenship and civic engagement of youngster and that is why we have widen the idea of those activities to multiliteracy.

Multiliteracy means abilities to obtain, combine, modify, produce, present and evaluate information in different modes, in different contexts and situations, and by using various tools¹.

The pupils need multiliteracy in order to interpret the world around them and to perceive its cultural diversity. Multiliteracy supports the development of critical thinking and learning skills. While developing it, the pupils also discuss and reflect ethical and aesthetic questions. Multiliteracy involves many different literacies that are developed in all teaching and learning. The pupils must have opportunities to practise their skills both in traditional learning environments and in digital environments that exploit technology and media in different ways.¹

CIVIC ENGAGEMENT DEFINITION

David E. Campbell's summarization says that «the increasingly common concern among many knowledgeable observers is that one-on-one volunteering has begun to supplant action directed at collective solutions to social problems, particularly among younger people.

Volunteering, social and political participation – roughly stated – adhere to the same mechanisms and logics: firstly, the same character traits benefitting volunteering also benefit civic engagement secondly, all concepts of strong civil society are grounded in high rates of volunteering and civic engagement thirdly, recent data on volunteering in the US show a strong correlation between volunteering and civic activities.

A recent summary points to several forms of engagement, among others, voluntary work, informal political action, activities with political implications, awareness-raising, altruistic acts and general social participation. What today's young people seem less interested in is engaging in «classic» civic participation forms like officially joining an organization or voting. For instance it was measured how young people express their political views; they found their informants did not use «classic channels» like joining political parties and voting. Rather, the youths were contacting officials, the mass media and talk shows, they were signing e-petitions, boycotting, canvassing, participating in protests and trying to persuade others.

The review therefore discusses research devoted to understanding any form of engagement aimed at influencing government policy (political), as well as involvement aimed at facilitating collective action (civic action). Such a wide definition might seem unsatisfying, but recent studies do not enable us to assume clear distinctions between the outlined political and civic forms of engagement.

These developments result in four major trends in civic engagement: firstly, scholars detect a shift from face-to-face interaction in long-lasting civic groups

to mediated interaction within fluctuating networks; secondly, individuals seem to move from value-based to consumerbased relations within the civic sphere; thirdly, civic engagement is shifting from diffuse horizontal involvement to centrally coordinated activities; fourthly, there is a shift from a kind of civic engagement mediated by associations to a direct involvement, or an engagement mediated by structures that are usually not defined as «civic».

The common denominators for changes in civic engagement are the transition from «traditional/classical/old» to «modern/new». from «collectivistic» to «individualistic» , from «membershipbased» to «program-based»,. from «regular» to «episodic», and from «institutionalized» to «self-organized» types of engagement.

As already elaborated, contemporary young people's civic involvement seems to diverge significantly from «classic» forms such as organizing in groups, forming interest groups, becoming involved in a political party, etc.

It was noted how young people express their political views; they found their informants did not use «classic channels» like joining political parties and voting. Rather, the youths were contacting officials, the mass media and talk shows, they were signing e-petitions, boycotting, canvassing, participating in protests and trying to persuade others.

Studies conducted in the USA primarily focus on «volunteering». European studies, by contrast, are more concerned with «social engagement» and «political engagement».²

YOUNGSTER WANT TO ACT WITH CITIZENSHIP

Individuals participate in civic activities because they (perhaps subconsciously) assume it will serve their purposes. Social scientists have identified five basic categories of egoistic motivation: career reasoning, gaining knowledge, personal development, esteem enhancement and social concerns² To explain more deeply these five items we can start from career reasoning.

Youngsters want to develop their career for example by presenting themselves with manifold digital ways. Using videos is good way to make CV to be send to employer and to get a job.

Gaining knowledge is of course the basic need for students and in many DA :s it is possible to get. Let us take example of museum games where students learn history.

Personal development means basically a lot of different things but perhaps the most important development can be done with social skills with the help of DA. First the usage of DA means working in team and with gaming applications.

Esteem enhancement can be achieved by pupils by performing demanding tasks in within DA. They can show to others how well they can handle digital applications.

Social concerns are present almost in all DA. The typical learning aspect is not emphasized in DA's. The co-operation with other students is more important. This enhances social skills.

HOW SCHOOL CAN SUPPORT CIVIC ENGAGEMENT AND ACTIVE CITIZENSHIP

School can train practically civic engagement and civic activity during basic education.

The school should actively encourage the pupils to reinforce the participation of each pupil. The school environment offers a safe setting for this, while basic education also lays a foundation of competence for the pupils' growth into active citizens who use their democratic rights and freedoms responsibly.

APP YOUR SCHOOL project has initiated several Digital Ateliers where civic engagement and civic activity can be trained at the same time as pupils learn ordinary things like languages, mathematics, history, music etc.

The **APP YOUR SCHOOL** project and developed Digital Ateliers can enhance more active citizenship skills than civic engagement skills because civic engagement is more politically oriented skill and it is not included in school education program.

DIGITAL ATELIERS, CIVIC ENGAGEMENT AND ACTIVE CITIZENSHIP IN FINLAND

The Digital Ateliers in Finland were experimented for the first class students of upper secondary school, in which the students have passed through the aforementioned path of digital education. In the Finnish education system the teachers have the liberty to teach their subject and the curriculum-based topics as they personally best see fit, e.g. through textbooks, digital materials or project-based learning. The very basis of the system is that in Finland there is the requirement that every teacher has to pass a Master's Degree since early 1970s. At upper secondary school this means that every teacher has a Master's Degree including 2 to 3 subjects (e.g. as a language teacher Finnish, English, Swedish, German, French, Spanish or other languages) in addition to which they have pursued pedagogical studies. The high education of teachers and their liberty to choose the teaching methods was an excellent basis for the experimentation of Digital Ateliers and their direct integration to the local curriculum in Kuopio. The teachers participating to the experimentation have shared their knowledge and experiences both through internal electronic platforms as well as at teacher trainings in Kuopio.

The basis of the **APP YOUR SCHOOL** Digital Ateliers experiment in Finland was to explore new practises of language learning with the help of technological platforms, as well as practice students' creative and collaborative skills. At the first Digital Atelier the teacher experimented the use of Kahoot questionnaires at the development of students' English language capacities, vocabulary and their co-operative capabilities. At the second Digital Atelier the main goal was to encourage students of English language in independent and self-guided learning process during which they read an original English novel of their choice and create a digital visual book review through Storybird application and using the guidelines provided by the teacher. At the third Digital Atelier the students used Padlet application at understanding the link between language and thinking as well as becoming aware of the importance of one's mother tongue in the context of the languages in the world. At the fourth Digital Atelier was experimented with Seppo.io game platform which combines experimental, project-based learning and utilising technology in a real-life environment enhancing the problem-solving, creativity, teamwork and sharing of one's know-how skills of the students. At the fifth Digital Atelier the students were introduced to Socrative, which is a classroom app for fun, effective classroom engagement. No matter where or how you teach, Socrative allows you to instantly connect with students as learning happens. Socrative can be applied to any subject although in the Finnish experimentation it was applied at English language classes. The Finnish experimentation showed that combining 21st century technological skills to everyday life and creativity of the students and teachers is very rewarding and effective at enhancing our students' skills and their preparedness for the future world of work.

SEPPO IO

BRIEF PRESENTATION

Seppo IO is mobile game based on the map and it can be used as learning environment or simply quiding tool in the city, museums etc.

CIVIC ENGAGEMENT

The usefulness of Seppo IO in practicing skills in the civic engagement and civic activity depend greatly on the app which is developed. In Finland experiment of Seppo IO was an application of museum guidance case. The used application promotes civic engagement in knowing arts. This is a very nice way to get a vision to the world of art which is essential part of the civic engagement and civic activity skills. Active citizenship cannot be seen in this app.

The Seppo IO trains ICT skills and also using smart phones with applications. Seppo IO shows the basic principles of gaming technology and ideas.

Kuopio city is using the Seppo IO in encouraging people to sport and to know the living environment.

PADLETS

BRIEF PRESENTATION

The main goal is to encourage the students in independent data acquisition, to share new information, to gain knowledge about the subject, to develop teamwork skills, to utilize ICT in completing the tasks and sharing the results. The goal is also to study by using analogical and digital methods.

CIVIC ENGAGEMENT

The students are encouraged to use different working environments. The main area of civic engagement in this app is ICT engagement.

STORYBIRD

The Storybird experiment is also at art field of books. Pupils learned to write a summary of a book. This DA has a strong effect on learning art. Teacher can guide the way of work because during the process teacher has this action. Again how this can enforce the civic engagement and civic activity skills is depending the chosen subject.

BRIEF PRESENTATION

The main goal is to encourage students in independent and self-guided learning process during which they read an original English novel of their choice and create a visual book review using the guidelines provided by the teacher. They are also encouraged to gain multidisciplinary knowledge about the author and the context of the era present in the novel, to share new information with their fellow students, to utilize ICT in completing the tasks and sharing the results. The goal is also to study by using analogical and digital methods.

CIVIC ENGAGEMENT

The students are encouraged to use different working environments, e.g. the public library. Civic engagement in this app goes to field of culture.

KAHOOT

BRIEF PRESENTATION

The main goal is to revise and learn new vocabulary and structures in a fun way using interactive quizzes/games/discussions/ surveys as format to share new information, to develop teamwork skills, to utilize ICT in completing the tasks and sharing the results. The goal is also to study by using analogical and digital methods.

CIVIC ENGAGEMENT

The students are encouraged to use different working environments, e.g. the public library. Kahoot proceed international skills like language and team working skills.

SOKRATES

BRIEF PRESENTATION

Socrative is a tool to make exams for students. It allows to students to answer in many different ways. Socrative is your classroom app for fun, effective classroom engagement. No matter where or how you teach, Socrative allows you to instantly connect with students as learning happens. Quickly assess students with prepared activities or on-the-fly questions to get immediate insight into student understanding. Then use auto-populated results to determine the best instructional approach to most effectively drive learning.

CIVIC ENGAGEMENT

The Sokrates app is for testing learning outcomes. Students become familiar with learning curve and can compare learning results with each other. The Sokrates gives ideas to pupils what is important in learning if they develop exams to each other.

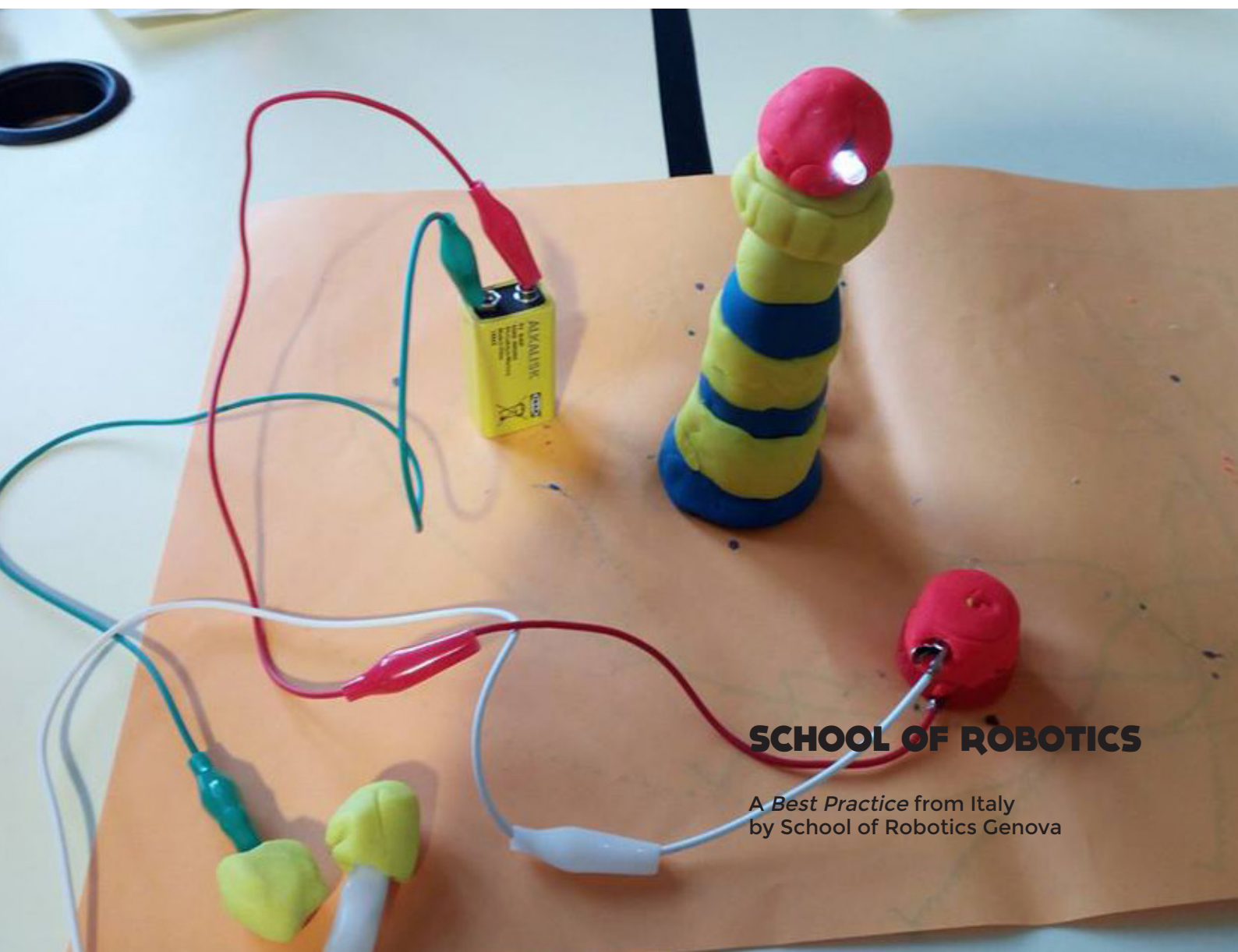
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SCHOOL OF ROBOTICS

*A Best Practice from Italy
by School of Robotics Genova*

PEDAGOGICAL NEEDS FOR TEACHERS

**TO INTEGRATE APPS
IN THE FORMAL SCHOOL
CURRICULUM**

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ABSTRACT

This chapter gives insight into the pedagogical needs of teachers to introduce ICT in the school curriculum from a Turkish perspective. The working area of the Esenler District Education Authority (ESENLER İLÇE MİLLÎ EĞİTİM MÜDÜRLÜĞÜ) comprises 54 public schools and around 3.000 teachers. Starting from a definition of pedagogical knowledge the author approaches the questions on how teachers can integrate technology into their teaching, which are the challenges that teachers and students alike face when teaching with technology and the necessity to develop collaborative learning approaches.

KEYWORDS

TEACHERS NEEDS

**PEDAGOGICAL
KNOWLEDGE**

**TECHNOLOGICAL
KNOWLEDGE**

ICT IN SCHOOL

**COLLABORATIVE
LEARNING**

PEDAGOGICAL KNOWLEDGE

Pedagogical knowledge is teachers' deep knowledge about the processes and practices or methods of teaching and learning. They encompass, among other things, overall educational purposes, values, and aims. This generic form of knowledge applies to understanding how students learn, general classroom management skills, lesson planning, and student assessment. It includes knowledge about techniques or methods used in the classroom; the nature of the target audience; and strategies for evaluating student understanding.

A teacher with deep pedagogical knowledge understands how students construct knowledge and acquire skills and how they develop habits of mind and positive dispositions toward learning. As such, pedagogical knowledge requires an understanding of cognitive, social, and developmental theories of learning and how they apply to students in the classroom.

HOW CAN TEACHERS INTEGRATE TECHNOLOGY INTO THEIR TEACHING?

The integration of technology into education is inevitable with the quick development of technology in every field. Technology; It is seen by many educators, teachers and researchers as an indicator of high quality in education. The importance of technology integration in curriculum is increasing day by day.

In order to educate students who have access to information and use this information, teachers should be able to use technological tools (computer, internet, etc.) effectively. Roblyer and Edwards (2005) presented five reasons for teachers to use technology in education:

1. Motivation
2. Educational skills
3. Teacher productivity
4. The necessity of the information age
5. Support new teaching techniques

Many educators and researchers believe that technology integration plays an important role in providing a rich education and training environment for the educational curriculum. Our pupils and students are all born during the digital era for which they need a wide range of technological and digital skills in their everyday life and most importantly in their future work and career.

Usually, teachers are willing to use technology in their lessons especially, Science, Math, Foreign Language, Geography teachers are using smart boards or projection in their lessons. As we saw in reality, technology is used for just presentation but according to contemporary education skills, the main idea should be create active students. Embracing the use of technology integration in our daily work beyond word processing and power point presentations is still new to many educators.

There is no "one best way" to integrate technology into curriculum. Honouring the idea that teaching with technology is a complex, ill-structured task; we propose that understanding approaches to successful technology integration requires educators to develop new ways of comprehending and accommodating this complexity.

At the heart of good teaching with technology are three core components: content, pedagogy, and technology, plus the relationships among and between them. The interactions between and among the three components, playing out differently across diverse contexts, account for the wide variations seen in the extent and quality of educational technology integration. These three knowledge bases (content, pedagogy, and technology) form the core of the technology, pedagogy, and content knowledge (TPACK) framework. An overview of the framework is provided in the following section, though more detailed descriptions may be found elsewhere (e.g., Koehler & 2008; Mishra & Koehler, 2006).

Teachers who participated in our DAs generally think that it is not so difficult to integrate technology into education. But beside this it is only possible with a limited area of curriculum. Some part of the lessons should be theoretical and it is not easy integrate technology for this kind of lessons.

THE TPACK FRAMEWORK

The TPACK framework builds on Shulman's (1987, 1986) descriptions of PCK to describe how teachers' understanding of educational technologies and PCK interact with one another to produce effective teaching with technology. Other authors have discussed similar ideas, though often using different labeling schemes. The conception of TPACK described here has developed over time and through a series of publications, with the most complete descriptions of the framework found in Mishra and Koehler (2006) and Koehler and Mishra (2008).

In this model (see Figure 1), there are three main components of teachers' knowledge: content, pedagogy, and technology. Equally important to the model are the interactions between and among these bodies of knowledge, represented as PCK, TCK (technological content knowledge), TPK (technological pedagogical knowledge), and TPACK.

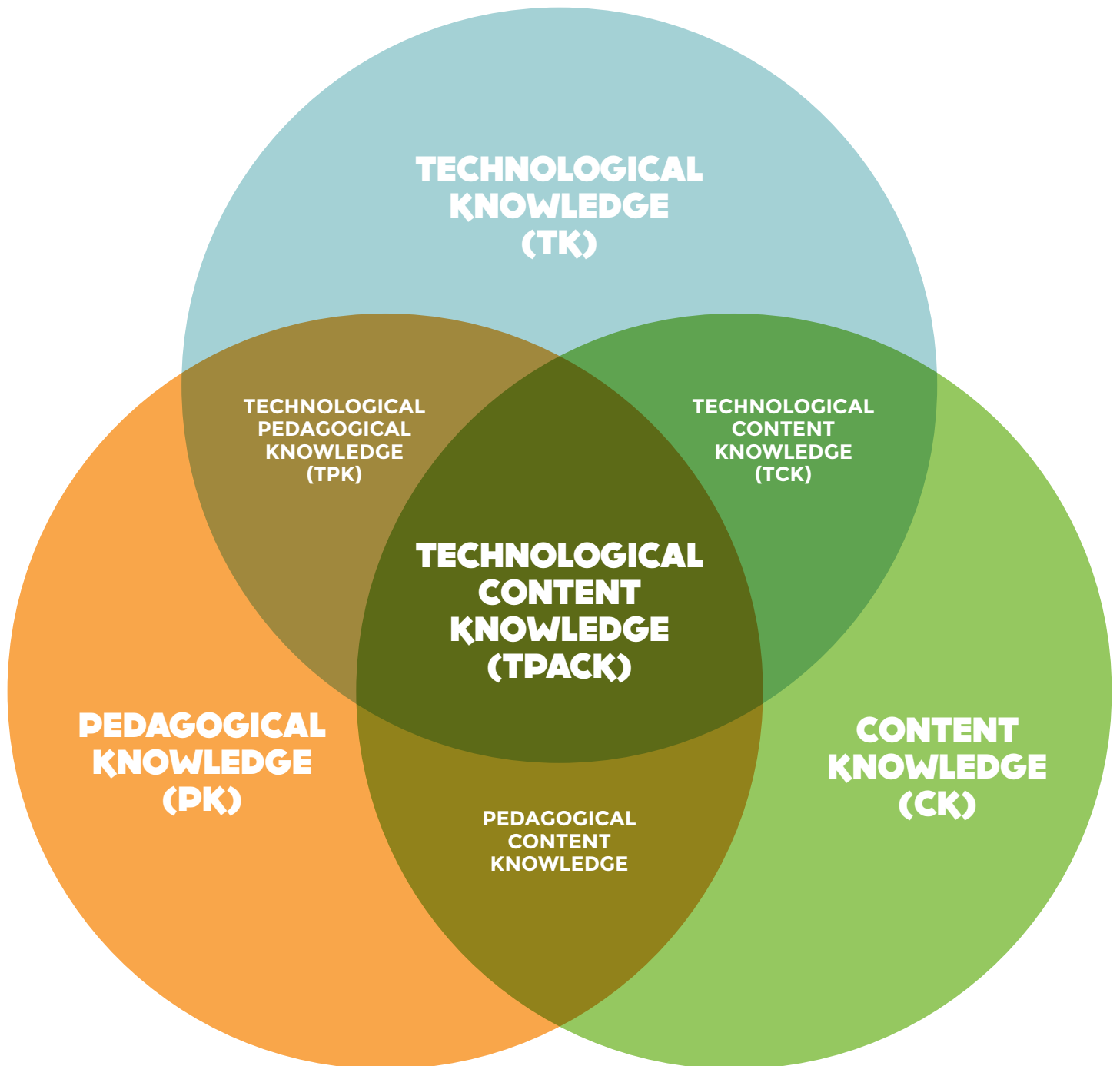


FIGURE 1. The TPACK framework and its knowledge components

THE CHALLENGES OF TEACHING WITH TECHNOLOGY

As a matter of practical significance, however, most of the technologies under consideration in current literature are newer and digital and have some inherent properties that make applying them in straight forward ways difficult.

Most traditional pedagogical technologies are characterized by specificity (a pencil is for writing, while a microscope is for viewing small objects); stability (pencils, pendulums, and chalkboards have not changed a great deal over time); and transparency of function (the inner workings of the pencil or the pendulum are simple and directly related to their function) (Simon, 1969). Over time, these technologies achieve a transparency of perception (Bruce & Hogan, 1998); they become commonplace and, in most cases, are not even considered to be technologies. Digital technologies—such as computers, handheld devices, and software applications—by contrast, are protean (usable in many different ways; Papert, 1980); unstable (rapidly changing); and opaque (the inner workings are hidden from users; Turkle, 1995). On an academic level, it is easy to argue that a pencil and a software simulation are both technologies. The latter, however, is qualitatively different in that its functioning is more opaque to teachers and offers fundamentally less stability than more traditional technologies. By their very nature, newer digital technologies, which are protean, unstable, and opaque, present new challenges to teachers who are struggling to use more technology in their teaching.

Some teacher, especially young ones are more eager to integrate technology to their lessons but some of the technological materials are expensive and they are not providing by school management. Beside this nowadays most of the online educational tools are seems free but when you start to use it in your lessons you have to register yourself and you have to pay some amount of money and this money is not to buy full version usually you have to pay monthly and it is getting a problem after a while.

In their experiences we used 10 tablets on DAs in different schools in rotative way. But if they want to implement this kind of DAs during whole education period, they have to buy tablets and they have to buy minimum 1 tablet to each students for an effective learning but it costs is a lot for most of the schools' budget.

Social and contextual factors also complicate the relationships between teaching and technology. Social and institutional contexts are often unsupportive of teachers' efforts to integrate technology use into their work. Teachers often have inadequate (or inappropriate) experience with using digital technologies for teaching and learning. Many teachers earned degrees at a time when educational technology was at a very different stage of development than it is today. It is, thus, not surprising that they do not consider themselves sufficiently prepared to use technology in the classroom and often do not appreciate its value or relevance to teaching and learning. Acquiring a new knowledge base and skill set can be challenging, particularly if it is a time-intensive activity that must fit into a busy schedule. Moreover, this knowledge is unlikely to be used unless teachers can conceive of technology uses that are consistent with their existing pedagogical beliefs (Ertmer, 2005). Furthermore, teachers have often been provided with inadequate training for this task. Many approaches to teachers' professional development offer a onesize-fits-all approach to technology integration when, in fact, teachers operate in diverse contexts of teaching and learning.

Another challenge of teachers who participated to our DAs is to have crowded classrooms. We experienced DAs with 10 students it was effective when you have less student and enough materials with this way they found chance to give feedback one to one to each students in a limited lesson time. But in reality they says they have crowded classrooms approximately 40 students with such a big groups it is not possible to provide enough equipments and time management is almost impossible. And if teachers want to implement this kind of DAs with this kind of crowded classrooms, it is not possible to reach each students one by one and if you can 't support each student in right time it is not good way to teach lesson with technology.

Normally for a Science and Technology lesson, students must have the prerequisite skills it is easy to read or find something before lesson; they can make researches for improve their prerequisite skills. But with some of DAs it is important to students must have some basic technological prerequisite and the evaluation of it by teachers is an extra work.

Traditional teachers are not willing to integrate technology to their lessons because technological prerequisite of these kinds of teachers are not enough. Also some of them thought it is not necessary to have this kind of innovations for lessons.

In fact these teachers are not using technology in their life. It is not reasonable to wait from them to integrate technology into their lessons.

Our working area which is ESENER district of Istanbul has 54 public schools and around 3.000 teachers. We sent documents to all schools about **APP YOUR SCHOOL** projects and each teacher found a chance to read the aim of the project and we organised meetings for some teachers to explain methodologies of the project with details. And then when we make announcement about the implementation of DAs, many teachers want to be in the project. As we experienced most of the voluntary teachers are young teachers who want to be in the project. It shows us implementation of technological innovations in the classrooms is only possible with a new generation of teachers or with open mind teachers.

WHAT ARE THE COLLABORATIVE APPROACHES TO LEARNING?

Collaborative learning is an umbrella term for a variety of approaches in education that involve joint intellectual effort by students or students and teachers. Collaborative learning refers to methodologies and environments in which learners engage in a common task in which each individual depends on and is accountable to each other. It involves use of small groups so that all students can maximise their learning and that of their peers. It is a process of shared creation: two or more individuals interacting to create a shared understanding of a concept, discipline or area of practice that none had previously possessed or could have come to on their own. Collaborative learning activities can include collaborative writing, group projects, and other activities.

The best learning happens when children are actively involved in a project. Collaborative learning is an approach that encourages students to create groups and work together to solve a given problem. There are several benefits learners get when working in a group setting.

Collaborative learning makes students with different backgrounds, race, or upbringing, to work together. They come together in a setting that maybe would not be possible if it were not for collaborative learning. In order to solve a project's given problem, children need to communicate. They are able to hear different opinions and learn more about different cultures. The collaborative learning methodology is ideal for children that have difficulties in a social setting.

Generally, people have different skills, passions, and knowledge. In a small collaborative group, when a question is raised, different students can have different answers and children can learn new things from one another, but also understand different perspectives.

In order to achieve a goal, students need to work together. They can work together without trusting each other, but for an effective collaboration and to reach a common goal, they need to learn to trust each other.

In a small group setting, each student has the opportunity to express her or his ideas. Being able to do so, and being heard can give the feeling of importance and value. The learning experience becomes more fun, and students are eager to learn more. As students work as a team, they also receive more support, therefore gain confidence. Collaborative learning can help shy students express themselves more.

Thanks to DAs, they gave a chance to our teachers for working collaborative way. In most of the DAs students worked with their peers and with this way it were more effective and better also for teachers because they learnt some things from each other. Also with this collaborative way, if a student prerequisite skills of technology is not enough they can learn from their friends more quickly and easily.

DIGITAL ATELIER FROM A TEACHER'S PERSPECTIVE*

*

This chapter was based on the interviews with Katarzyna Michalska and Barbara Kozłowska, who created and delivered Digital Ateliers in Bytom (Poland) as part of the project.

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ABSTRACT

This chapter presents Digital Atelier method from a perspective of a teacher. It points out its benefits, such as: raising level of civic engagement, providing young people with skills required on the job market and fostering relationships between teachers and students. It also provides practical tips which will help teachers and educators start their own Digital Ateliers. It concludes with reflections of two teachers involved in running Digital Ateliers on their personal benefits from participating in the project.

KEYWORDS

TEACHERS

SCHOOL

TIPS

PRACTICE

3 REASONS TO GIVE IT A GO

Digital Atelier can be an excellent addition to the core school activities. In Digital Atelier students develop their communication skills, empathy, ability to cooperate and organise their own work. These competencies are often missed out during usual lessons. Working in groups they have to face various challenges: choosing a leader, brainstorming ideas, accepting the fact, that their idea was rejected, making compromises. Digital Atelier also enhances citizenship and social awareness. Often it is the first time when students feel that they have influence on the world around them. They observe how their activity - film, happening, artwork - create specific results and provoke reaction of the audience. They realise that for this reaction to happen, some action has to be taken in the first place. Understanding this is a basis of any social and civic activity.

What is more, Digital Atelier develops competencies sought after on the job market. At school we often focus on the quality of the educational process, understood as delivering knowledge and skills related to solving specific tasks. However, success on the job market is much more dependent on the soft skills. Maybe this argument will convince your school board to experiment with Digital Atelier? It is also a way to practice creative use of new technologies, to explore how to use them in a new and constructive way. It is worth to consider this approach as an alternative to a widely spread ban on using smartphones at school.

Digital Atelier is also an excellent way to look at your students from a different perspective. Taking part in different activities they have a chance to show their extra-curricular skills, which are usually unknown to others. This allows teachers to incorporate this knowledge in planning future work, allowing students to maximise their potential. What is more, Digital Ateliers go against the idea that students are more competent in using new technologies than teachers. In practice it turns out that they interact with technologies in passive and repetitive way. Very rarely they are offered opportunity to use technologies creatively and constructively. It is teachers, who are able to show them these new activities. It creates completely new level of understanding. Suddenly we realise that we are on the same level and we can learn from each other. Therefore Digital Atelier can also be a starting point in changing relations between students and teachers.

HOW TO START? PRACTICAL TIPS

LOOK FOR INSPIRATION IN YOURSELF

Use Digital Atelier scenarios as inspiration, but do not hesitate to follow your own path. Look for topics that are of interest to you, but you haven't got time to pursue them. Be authentic. You can also consider introducing in your Digital Atelier topics from different subjects, such as: geography, history, civic education, national language or even physics. It is just a matter of your plan and imagination!

USE AVAILABLE DEVICES

You do not need PCs or tablets for your Digital Atelier. Smartphones are widely available and they are very powerful tools, which give you access to voice recorder and a camera. It fits in your pocket and can be carried everywhere. Students know their devices and do not need extra time to get familiar with some new equipment, which allows them to stay focused on their tasks.

TAKE IT STEP BY STEP

Experiment with Digital Atelier as a small project, one-off event or single after-school activity. It will allow you to test new format of working with a group and communicating with students. Very quickly you will find out that running Digital Atelier is very easy and you will see its first effects: students will be more engaged in the activities and will achieve better results. When you are ready, plan a cycle of activities and watch your students develop class after class. Tasks, which were difficult at the start, will become much easier, especially in the area of social interactions and teamwork.

GIVE YOURSELF TIME

Digital Ateliers work best in longer blocks (min. 1,5h). Switching between manual work and working with new technologies can be quite time consuming. Try to plan some extra time for problems with equipment or internet connection. Try not to hurry and not to rush your students. We are used to think that every minute at school should be occupied. However, students appreciate the fact that they can focus on something without time pressure. It allows them to collect their thoughts, think their work through and analyse their ideas. Preparing Digital Atelier also requires some work - from looking for inspirations and planning the process to testing apps, which you are planning to use.

TESTING, TESTING, TESTING

One of the goals of Digital Atelier is to let students experience how technologies can be used in creative and constructive way. It requires finding and testing different apps. It doesn't mean you have to learn all of their functionalities. Very often students will discover them during their work. Encourage students to share apps and tools that they use and to help their peers use them if necessary. Use it as an opportunity to start a conversation. How do we choose apps? Where to find good ones? Which criteria should we use to choose them?

FOCUS ON THE PROCESS

Prepare yourself for surprises. Be ready to abandon your own ideas. The final result might be different to what you expected. Try to be flexible and trust the method which will help you to achieve your goals. Do not panic, if you feel you lost control. It is one of the conditions of the creative process. The important thing is what happens to the participants, the results come second.

LOOK FOR SUPPORT

It is much easier to run Digital Atelier with two trainers. This way you can share the preparations and you can provide more support to the groups during activities. What is more, you gain additional motivation and some new perspective. Organising the Atelier after school or as a project day gives you more chance to work in a team. But what if you can't find an interested teacher? Start yourself, share the results, and the volunteers will follow!

LET THE STUDENTS TAKE OVER

When you and your students get familiar with Digital Atelier method, try to involve them in planning next meetings. Encourage them to diagnose needs and propose activities.

OPEN UP YOUR MIND

Running Digital Ateliers requires stepping out of our habits. Usually teachers enter classroom with specific plan for the lesson set out - how students should behave, what should they say, what the results will be. Digital Atelier works differently. The initial task can be completed in many different ways by the students. There is space for creativity, thinking outside the box, sharing ideas. Try not to dominate and force your opinions - the results will be positively surprising.

MY EXPERIENCE OF DIGITAL ATELIER - TEACHERS' REFLECTIONS

Today school as any other environment is affected by rush and time pressure. It doesn't leave much time to work in one's own pace and building relationships. Digital Atelier was for me a new and interesting experience. It was based on dialogue, lack of assesment and focus on the process. I had to leave room for students to make their own choices and this tested my level of openness. Switching to this new approach can be challenging. Trying to be good teachers we tend to plan students' reactions and time required to finish specific tasks. But what school calls „free time” in Digital Atelier becomes an opportunity to experiment, test, reflect and create. Students appreciate this, but it is difficult for teachers not to intervene! Another challenge is related to using mobile devices and testing different apps. But if you don't get discouraged at the start you will soon find that it can be rewarding and fascinating! What can be more satisfying for a teacher than a student who cannot wait for his/her another task? This happens in Digital Atelier; each activity becomes a surprise, an adventure. Both for students, who are allowed to work differently than during usual lessons, but also for teachers, who can get to know their students from a different perspective. What did I gain through Digital Ateliers? Confidence of working with apps. Now I use them all the time with various groups of students. I could also experience that the most important things happen when you lave a school desk, but later these skills positively affect students' academic performance. Once you open these doors you don't want to come back! (Katarzyna Michalska, 51st Primary School in Bytom, Poland)

Taking part in the **APP YOUR SCHOOL** project was a very interesting experience for me. Methodology proposed in this project, inspired by two excellent Italian teachers and artists - Bruno Munari and Alberto Manzi, connects all the elements of education which are for me the most important for development of young people. These are: communication skills, teamwork, division of tasks, creative and interdisciplinary approach to challenges, focusing on the cognitive process rather than the final effect, lack of competition and partnership in learning/teaching process. One of the main ideas behind Digital Atelier is to work with a student's potential and build their inner motivation. It is also worth noticing that in Digital Atelier teachers can follow their interests, passions, educational inspirations, even if they are outside the subject they teach. Digital Atelier is a method that encourages creative discoveries of both participants - students, as well as their creators - teachers. It proves that learning can be an amazing adventure. (Barbara Kozłowska, 51st Primary School in Bytom, Poland)

**HOW TO
TRANSFER
THE APPYOS
APPROACH?**

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ABSTRACT

In this chapter we present some tools to support the conception, the first testing and the experimentation of an hypothetical brand new Digital Atelier of your own.

Some pages provide you boxes where you can take note of your experience in the process we suggest, while some infographics sum up the methodological approach and you can print them and use them as mini-posters, visual reminders of the key points of the project.

KEYWORDS

KEY POINTS

OPEN TOOLS

INFOGRAPHICS

SHEET

NEW PROPOSALS

PREPARATION

KEY POINTS TO KEEP IN MIND TO DESIGN A DIGITAL ATELIER

RESEARCH WITH STUDENTS

The basic idea is that the teacher leads an exploration instead of being a transmitter of information and knowledge. He / she prepares the tools and materials, to activate the lesson in the discovery of possible answers to a question. The teaching plan is based on key questions. Each question opens a search and many interdisciplinary links, but always linked to the daily experience of the students.

TECHNOLOGIES SHOULD BE TREATED CULTURALLY

Our role as educators is to include ICT in the experiences of the child and the school to make them “instruments” and not “goals” in themselves; allow students to read and write the reality in which they live, for full active citizenship.

THE DIGITAL THAT INCREASES THE REAL IN A POETIC WAY

We are not interested in technical use (the tutorials often allow students to be completely autonomous technical understanding on how to use the tools) but we are interested in working: - on the divergent / creative uses of technology, - on collective and participatory uses, - on the connections and potential of technologies for the exploration of reality and life.

STUDENT'S DOCUMENTATION

Students prepare their documentation and schemes to keep in mind the main findings: learning to use a software or an app also allows the child to organize the phases of his research: how it works, how I discovered, what I can do, how many things can do this tool.

Students can create “collective notebooks” of their technological discoveries that remain available and can grow continuously, even with discoveries made outside the school and that come into the classroom thanks to the graphic / visual documentation. Students document the Digital Atelier to enhance what they have discovered, which mistakes open new ideas, which paths have been chosen.

BECOME AN INVENTOR

Students are usually good “consumers” of technology: thanks to our educational work, we can activate them as “researchers” and design a Digital Atelier where they can become and challenge themselves as “inventors”

ANCIENT QUESTIONS FOR CONTEMPORARY ISSUES

The taste of knowing and discovering what's inside, how it works, what it can be useful for, what possibility opens me is a question of ancient and profound meaning. From Munari, who gave time to the children so they could experiment with the tools and catalog and classify their discoveries, in Manzi who dismantled together with children the inner work of things, to put their knowledge and desire to students to discover the world for real, and to live experiences full of meaning also for their daily life.

DIGITAL ATELIER SHEET FOR FIRST PROPOSAL

TITLE

AGE

(From 11 to 17)

KEY QUESTION

(Summarize here your Digital Atelier using only one question)

OBJECTIVES

TIME

SOFTWARE AND APPS TO BE USED

TOPICS COVERED

BRIEF PRESENTATION

(5 sentences)

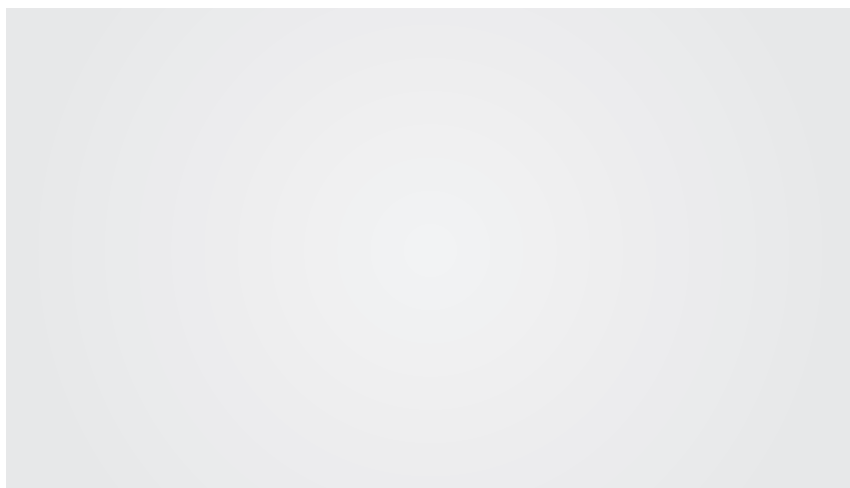
CIVIC ENGAGEMENT

(Describe how the Digital Atelier engages students to civic engagement.

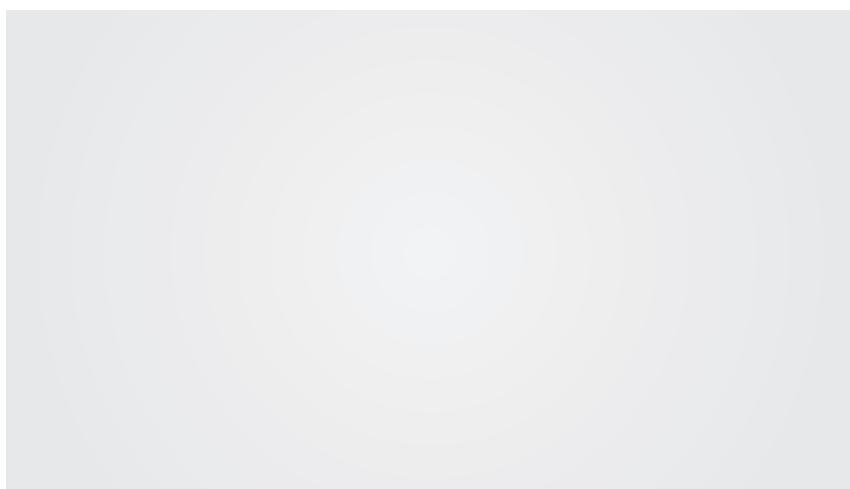
If possible, find a partner to send the proposal to, as a local library, a museum, a festival...)

PREPARATION OF SPACE FOR THE ATELIER

Remember to set up space, materials and tools in order to clarify activities (each tool in its proper moment...)



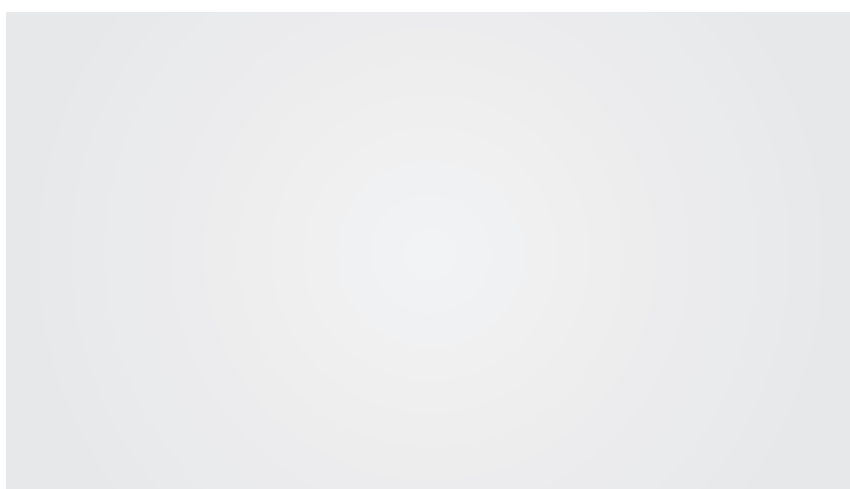
NEEDED MATERIALS



MAIN INSPIRATIONS TAKEN FROM PERSONAL RESEARCH

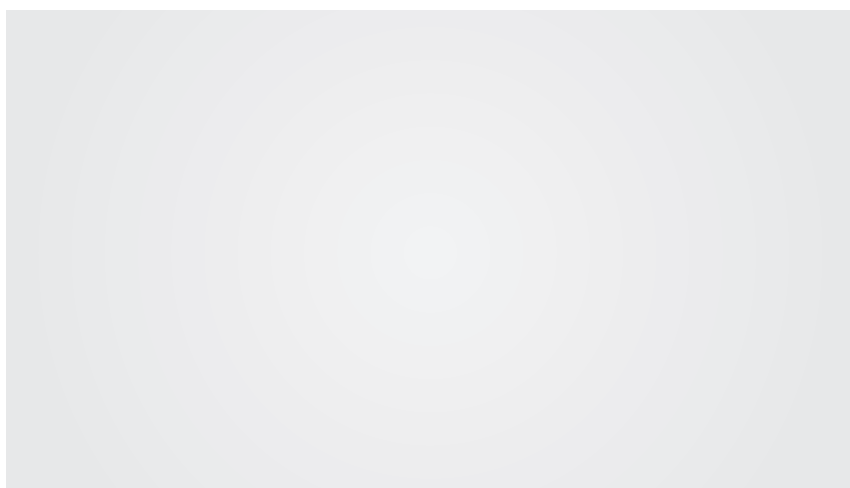
NOTE HERE THE MAIN ASPECTS YOU FIND INTERESTING. AT LEAST 3 FROM 3 DIFFERENT DISCIPLINES

(take your time to better discover your theme and how disciplines face it: from art to science, from mathematics to different cultural approaches)



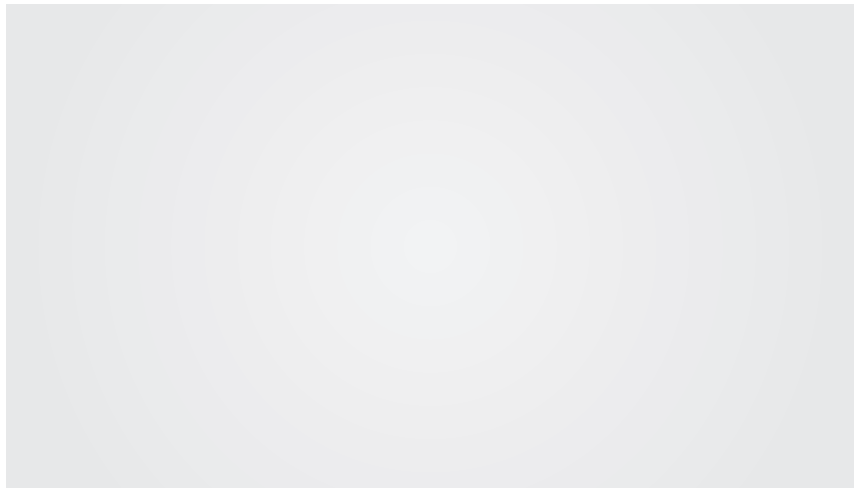
MASS MEDIA AND SOCIAL MEDIA CONNECTIONS

Find interesting connections with the media world (television, cinema, documentaries, fiction, videogame, music...) and social networks



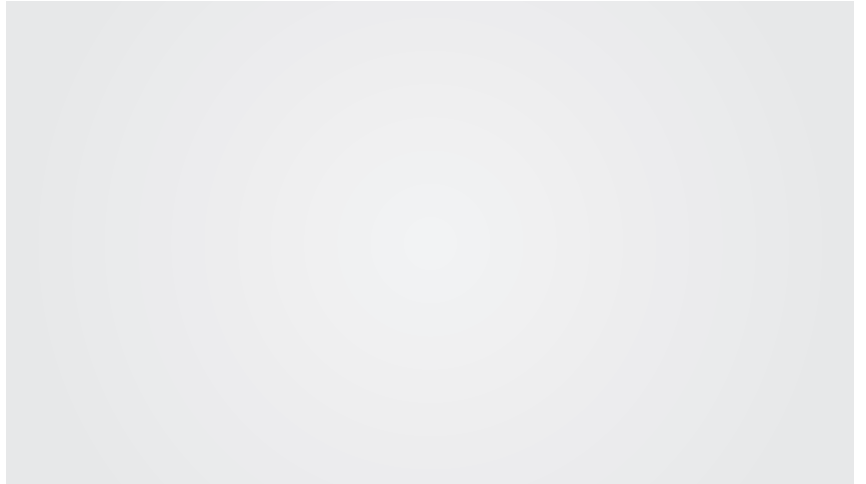
HOW DO YOU PLAN TO GIVE VOICE TO STUDENTS TO PRESENT OR SHOW THEIR PERSONAL SKILLS AND KNOWLEDGE?

We propose some ideas: students work in pairs and they interview each other (double interview); or you plan an artistic activity with the aim to work on images that represents their skills and knowledges; you propose them a text with a specific title.



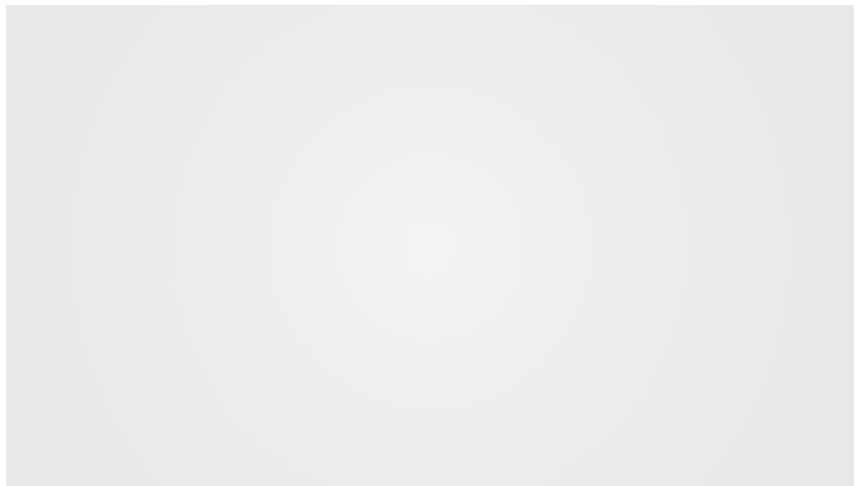
HOW DO YOU COLLECT ALL INFORMATION AS THE STARTING POINT OF A DIGITAL ATELIER?

Let's imagine, just to give you an example, that a classroom could design specific icons to use as self evaluation: a star could be used to express: I'm very able to do something; a color could have a certain meaning, etc.... so students could do their personal evaluation during all the Digital Ateliers.



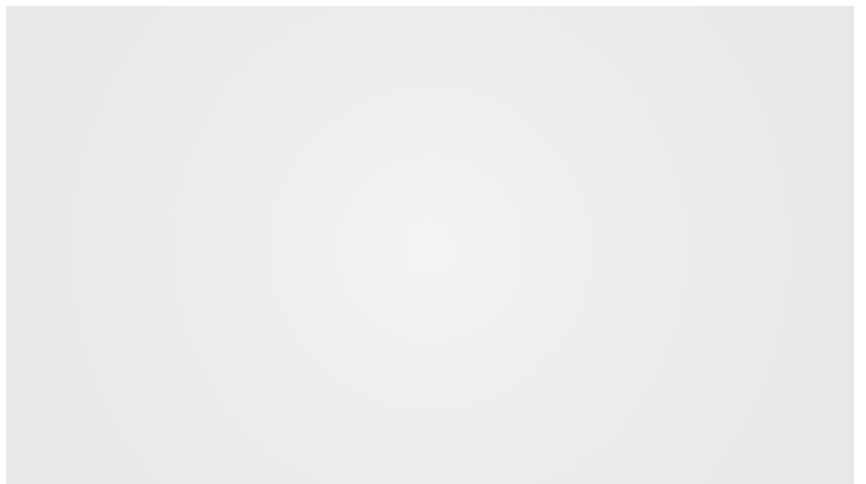
INTRODUCING KIDS TO THE KEY QUESTION: THE RESEARCH BEGINS

How will you present the research you will start in the Digital Atelier? Move each phase starting with a question.



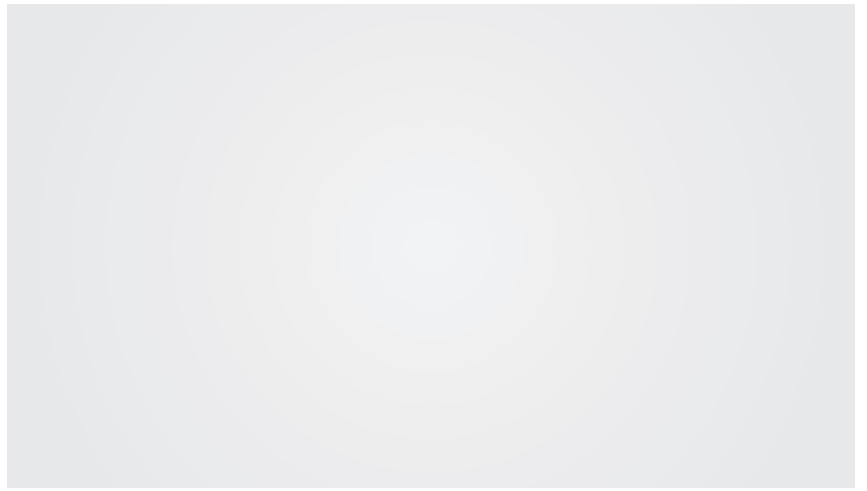
ACTION THAT UNFOLDS THE PRACTICAL ACTIVITY TO CLARIFY THE QUESTION AND ADVANCE TO THE FIRST ANSWERS

EXPERIMENTAL PHASE



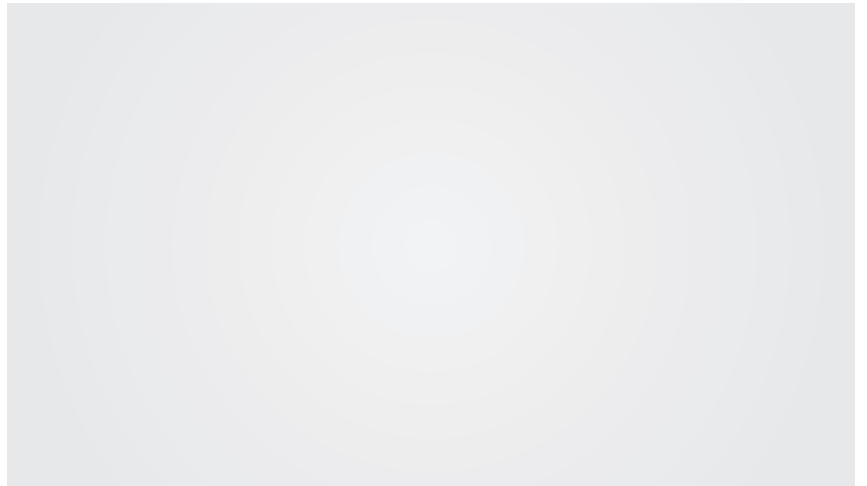
ACTIVE WORK OF THE STUDENT

CONCRETE HANDLING

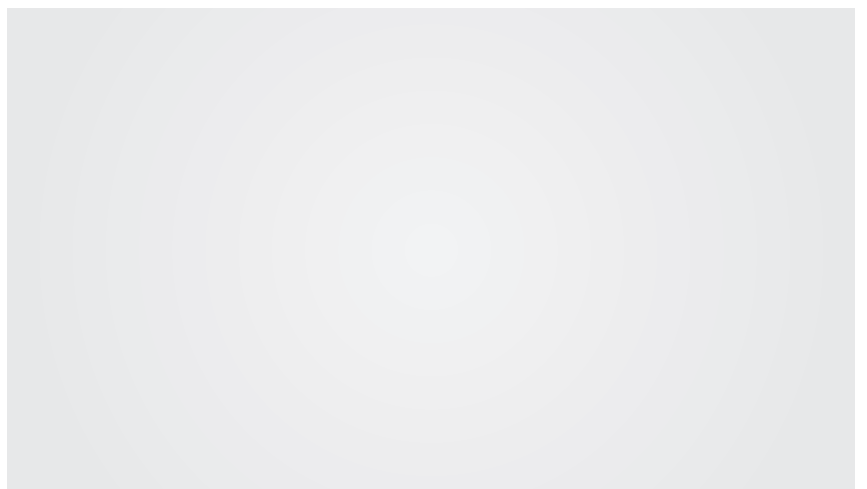


PRESENTATION OF FINDINGS AND RESULTS

GRAPHIC FORMAT /
VISUALIZATION OF INFORMATION



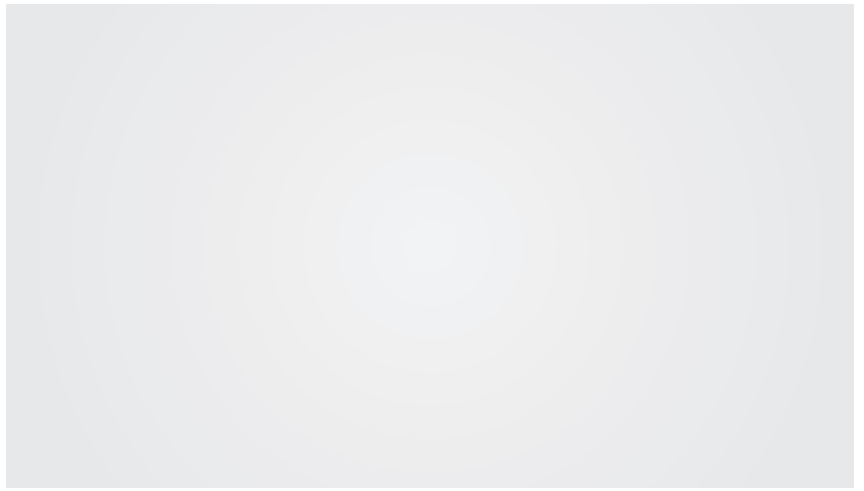
ANALYSIS OF RESULTS



SECOND ACTION THAT UNFOLDS THE PRACTICAL ACTIVITY

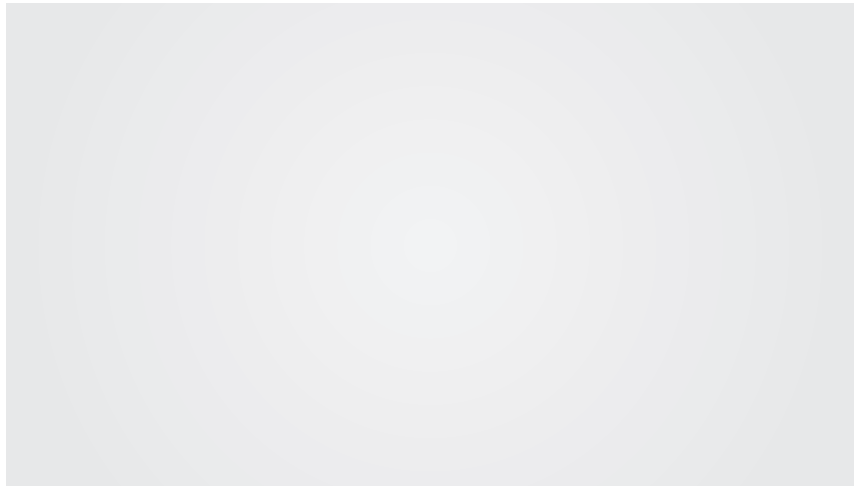
PROJECT / DESIGN PHASE

How will you start the second activity?
Move to each phase starting with a
question.



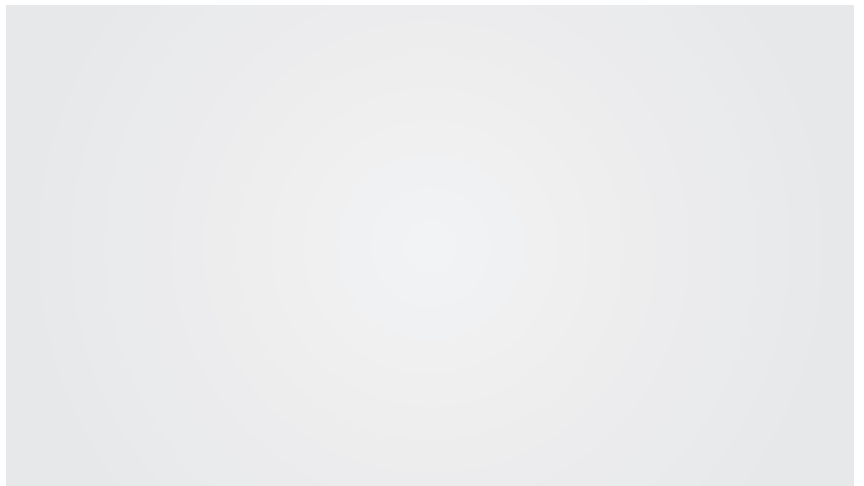
ACTIVE WORK OF THE STUDENT

CONCRETE HANDLING

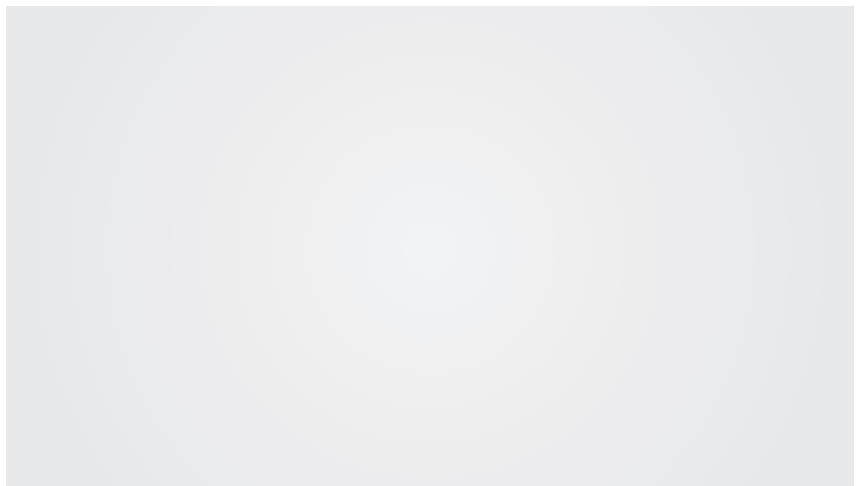


PRESENTATION OF FINDINGS AND RESULTS

GRAPHIC FORMAT / VISUALIZATION OF INFORMATION



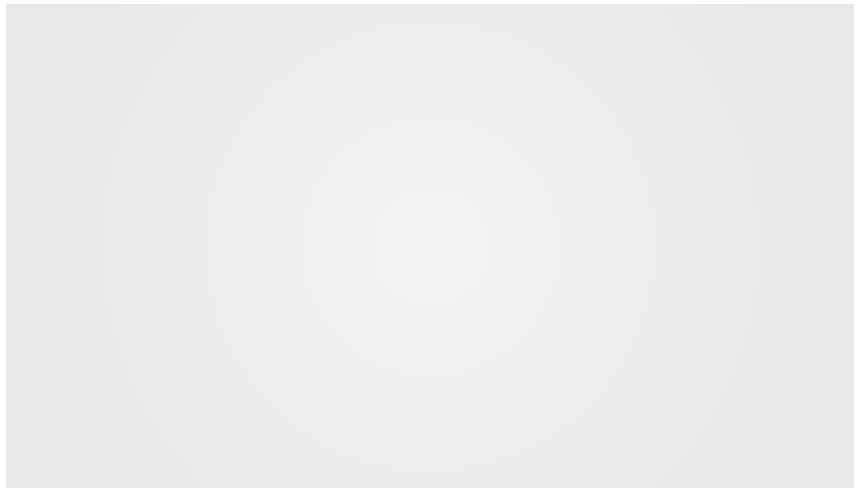
ANALYSIS OF RESULTS



THIRD ACTION THAT UNFOLDS THE PRACTICAL ACTIVITY

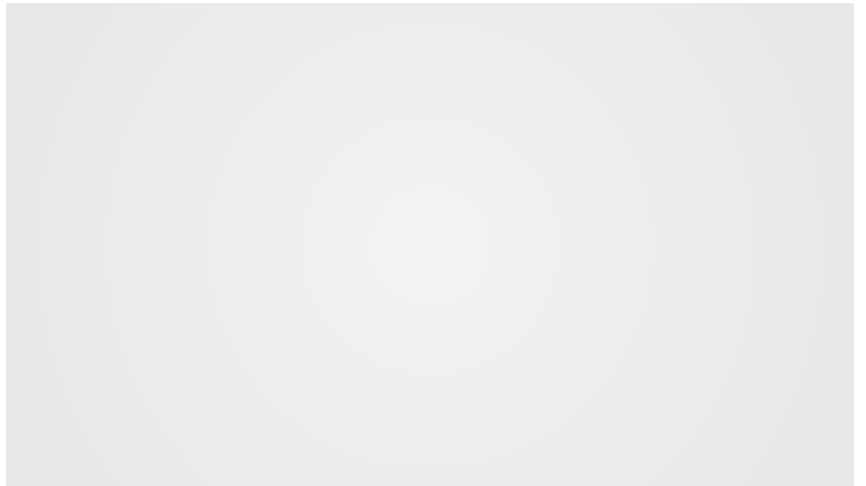
(PROJECT / DESIGN PHASE)

How will you start the third activity?
Move to each phase starting with a
question.



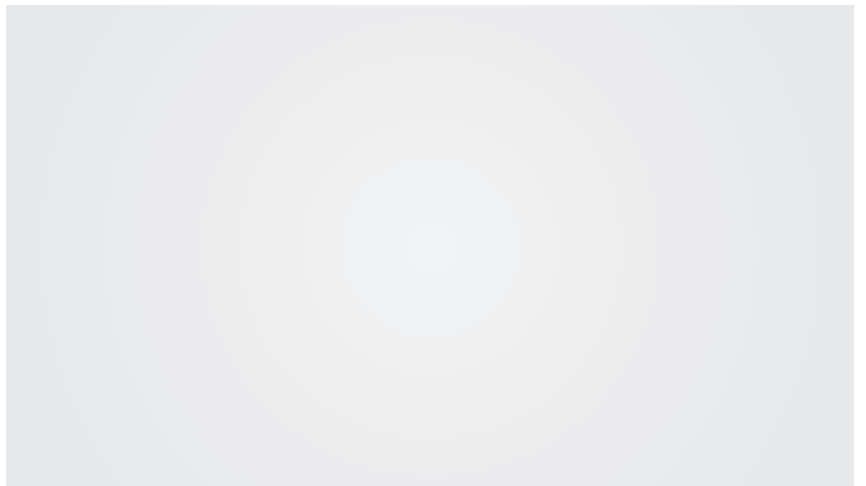
ACTIVE WORK OF THE STUDENT

CONCRETE HANDLING

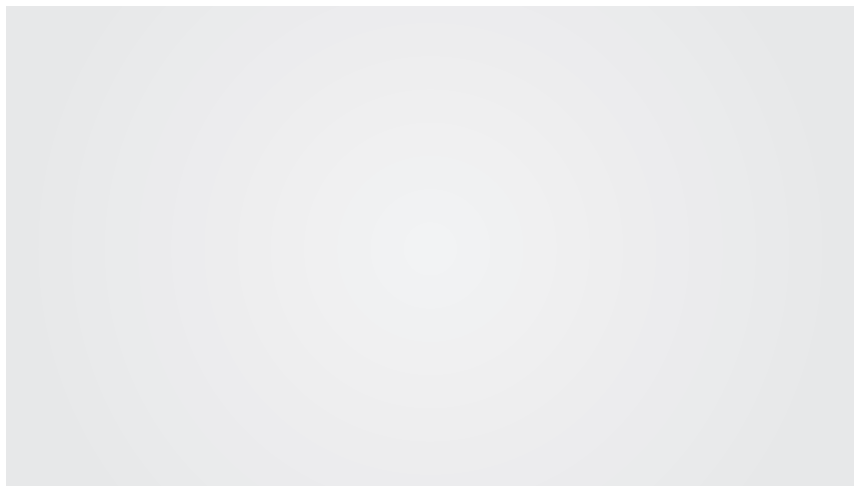


PRESENTATION OF FINDINGS AND RESULTS

**GRAPHIC FORMAT /
VISUALIZATION OF INFORMATION**



ANALYSIS OF RESULTS

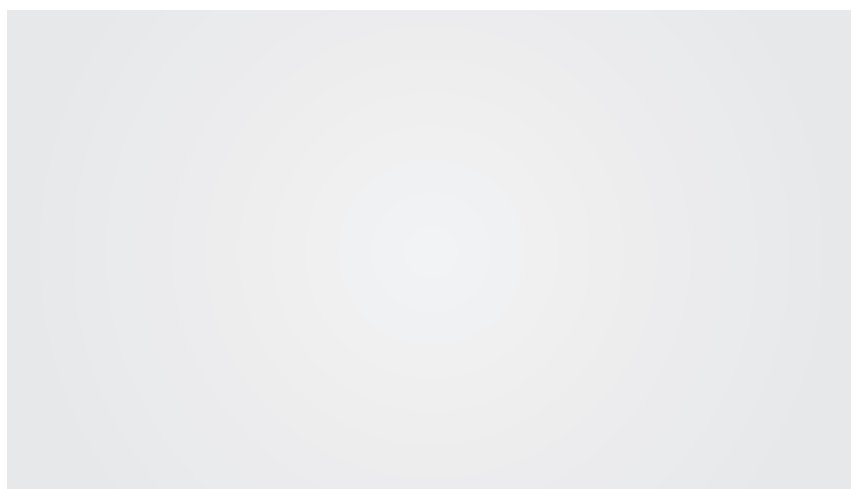
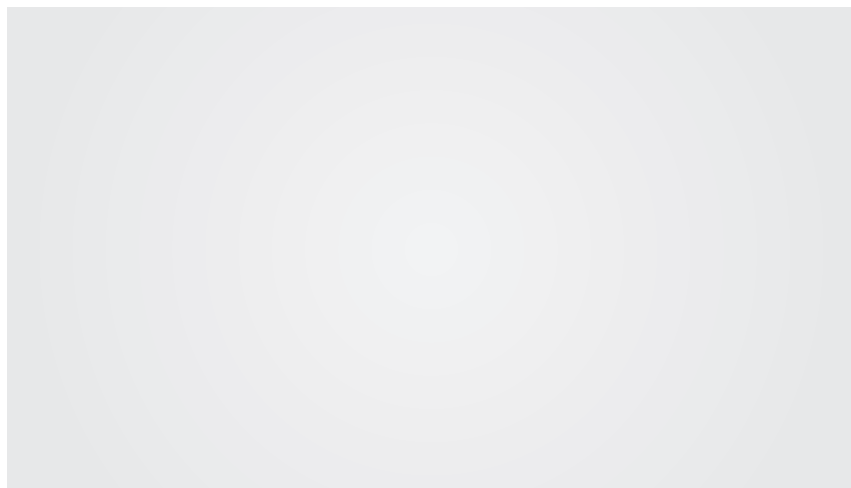
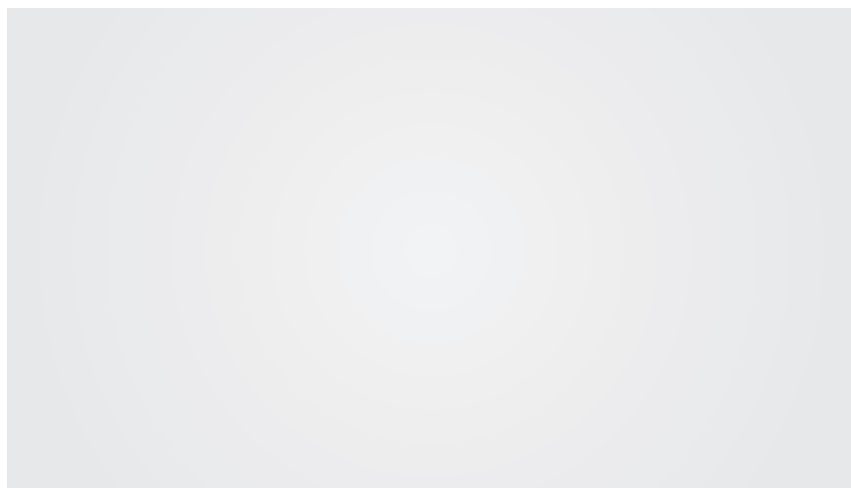


APPROACH TO A NEW SOFTWARE OR A NEW APP

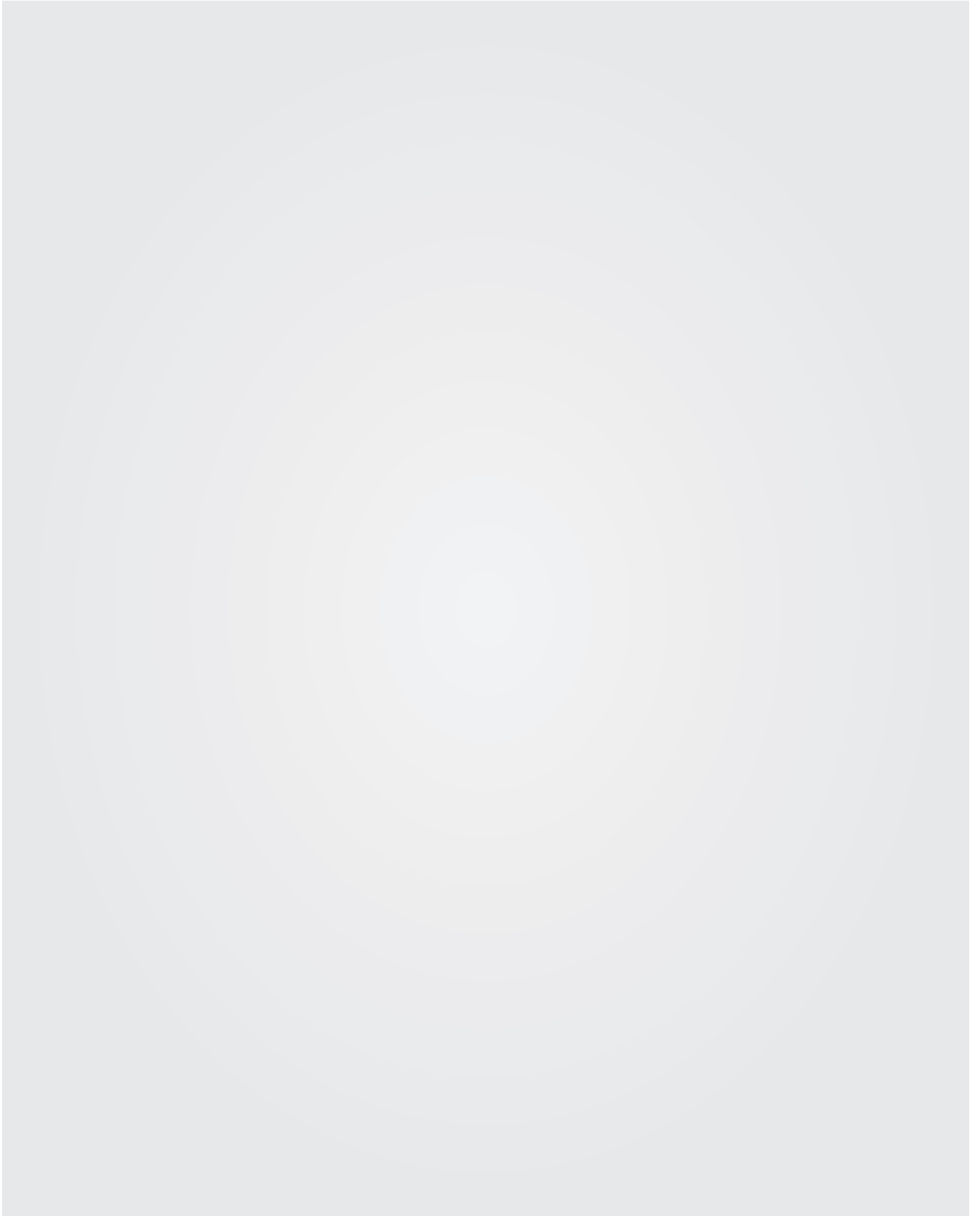
How will you present it? technical aspect and cultural aspect (it's not only a question of skills:e.g. in the case of coding, it's not enough to present scratch, you have to work on what is coding and coding in real life...)

LINK OF THE DIGITAL ATELIER WITH THE REAL LIFE OF STUDENTS

HOW DO YOU IMAGINE TO EVALUATE KNOWLEDGES AND SKILLS?



CONCLUSION



To support the dissemination of the methodological approach we propose 4 infographics that illustrate the key concepts of the methodological Approach of **APP YOUR SCHOOL**.

- The manifesto in 3 points
- Ten suggestions on how to design a Digital Atelier
- 3 Fundamental steps of a Digital Atelier
- Essential Features of a Digital Atelier

A MANIFESTO FOR THOSE WHO DEAL WITH TECHNOLOGY AND LEARNING

1. STUDENT RESEARCHER

Technology and students both need good questions in order to investigate the world with rigour and imagination. The teacher guides the exploration, prepares tools, materials, settings, and cultivates their own personal research.

2. STUDENT ARTISAN

Technology is used to make and think, undo and create. The teacher can disassemble and reassemble the technology to understand how it works and what it can do.

3. STUDENT INVENTOR

Technology is used to change the real and describe the imaginary, in a collective, divergent, poetic way. The students are the protagonists, the teacher is their main helper.

Replace “teacher” with “educator” “students” with “teenagers” and (if they seem useful) keep these rules on your desk.

**TEN SUGGESTIONS TO HELP CREATE
THE BEST POSSIBLE DESIGNS**

**1.
TEACH
STUDENTS
TO THINK**

**2.
AROUSE
WONDER
AND CURIOSITY,
EXPERIENCE
BEAUTY AND
POETRY**

**3.
DO NOT IMPOSE
YOURSELF: MAKE
THEM TALK, GIVE
THEM INCENTIVES,
SHARE PASSIONS,
SET THEM FREE**

**4.
EXPERIMENT WITH
TOOLS, TECHNIQUES,
MATERIALS TO
EXPLORE VARIANTS,
RESEARCH
POSSIBILITIES**

**5.
ACCEPT
THE ERROR AND
THE ACCIDENTAL,
THE UNCERTAIN
AND THE
AMBIGUOUS**

6.
**OVERCOME
THE LIMITS,
DARE TO THINK
BIG WITH
A SMILE**

7.
**ASK YOURSELF
AUTHENTIC
QUESTIONS**

8.
**PROVIDE
SPACE
AND TIME**

9.
**MAKE SURE
ACTIONS ARE SMART:
MAKE AND UNDO,
WITH ALL THE SENSES,
WITH EXPERIENCED,
INVENTIVE HANDS**

10.
**IMAGINE
SOLUTIONS,
DISCOVERING
THE NEW AND
THE OLD**

1

**SWITCHING
FROM THE
CONSUMPTION
OF
TECHNOLOGY**



**TO "DOING
RESEARCH"
WITH
TECHNOLOGY**



**INVENTING
NEW THINGS
AND NEW
TECHNOLOGIES**

**CHILDREN'S
AND TEENAGERS'
PASSION FOR
TECHNOLOGY**



CONSUMPTION



**UNDERSTANDING
HOW IT WORKS**



**PHASE
INSTRUCTION
BOOKLET**

2

**TEACHER
INTERVENTION**



RESEARCH



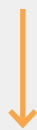
**GETTING AWAY
FROM THE
STEREOTYPICAL**



**PHASE
GUIDED
EXPERIMENTA-
TION**

3

**HANDS-ON AND
WORKSHOP
ACTIVITIES**



INVENTING



**OPENING
UP TO NEW
POSSIBILITIES**



**PHASE
DESIGNING
SOMETHING
NEW**

ESSENTIAL FEATURES

POETIC
VS
ANALYTICAL

ARTISTIC
VS
SCIENTIFIC

ANALOGUE
VS
DIGITAL

USELESS
VS
USEFUL

MAKING
VS
UNDOING

INDIVIDUAL
VS
COLLECTIVE

EXPLORING THE VARIANTS
VS
THE RIGHT ANSWER

CONCLUSIONS

Technologies are rewriting the relationships between people and their lives, the skills needed to live well, the places of participation: the activism possible in a video game context, the possibility to become the author of an app, the participatory creativity of a digital work intercept needs and desires of anyone that has access to a smartphone. **APP YOUR SCHOOL** has tried to create Digital Ateliers capable of enriching students' everyday life and of enhancing the communities to which they belong. Their aim was to generate new proposals for school activities but also to transform the school in a cultural central point of the community.

Designing a new QR-trailer shelf in a library, discovering divergent uses of technology in a contemporary art museum, creating your own video game, or a communication campaign are some concrete examples of what Digital Ateliers can do. Schools and other innovation poles can readjust our experiences to their own contexts with the support of this manual and of the National Toolkits, available in the different languages.

What we have observed:

- **THE EMERGENCE OF POSITIVE RESOURCES**

Digital technologies facilitate the participation of all students, even those that have learning difficulties or a low self-esteem (as, for example, the students at risk of school drop-out, who participated at the Italian Digital Atelier *Search myself on the web* - pag. 43).

- **THE DESIRE FOR AUTHORSHIP /PARTICIPATION**

Digital Ateliers have enhanced the authorship of the students, their ability to rewrite reality using technologies in a divergent way.

www.vimeo.com/260305310



«I really liked this project because I was able to express my creativity through technology.»
S., 13 years old,
Monteveglia, Italy
(*Search myself on the web* - pag. 43)

- **THE DIGITAL ATELIERS HAVE MADE TECHNOLOGY EASIER FOR TEACHERS TOO**

Not all teachers are able to integrate the potential of technology into their everyday school practice. The methodological approach of the project has tried to set them free from the anxiety of technical performance and let them rediscover the joy of didactic design. The mix between analogue and digital has proved to be fundamental to attract the less enthusiastic teachers into the experimentation of new languages.

The digital allows and facilitates productions, and makes the collective contents creation exciting and shareable. Participation is likely to be an abstract verb if it does not live on concrete occasions and paths. In the **APP YOUR SCHOOL** project, participation was understood as an opportunity to create something for one's community, with the organization of an exhibition, for example. Digital technologies have opened up a world of non-exploited possibilities by teachers and operators that were held

back by the fear of technical performance, of potential negative behaviors of the dangers on the internet and by the lack of technological skills.

Our Digital Ateliers have been designed to have very little technological requirements; this characteristic enable an easy re-design of their digital experiences, so that schools may offer variations to their students and their own community.

We are experiencing a renewed need for security in Europe, but the enhancement of people's creativity can lead to a regeneration of a common good that can no longer speak only of unease, problems, or dissatisfaction but must find new paths: that of aesthetics, beauty, poetry, metaphor, enchantment and wonder. If the same objectives moves us, the other is no longer an enemy, but a companion on the road.

The spaces and the possibilities of digital technologies are mostly still to be explored: it is necessary to break away from the anxiety of learning notions and

programs -for a moment- and dedicate some time to a personal or a collective research that puts technologies at the service of people's creative development.

But it is essential to support schools and innovative teachers, provide them with time and tools, to ensure that as much students as possible are given new expressive possibilities.

Our experimentation has revealed, despite the complexity and peculiarity of the different territorial contexts, that a challenge to a new design of Digital Ateliers -closer to teachers' and students' creativity- exists and can be tested.

Hoping that our path has been inspirational, we wish you all the best in your work.

CHAPTER

BIOGRAPHIES

ALBERTO MANZI (1924-1997)

SOURCES

WWW.CENTROALBERTOMANZI.IT



Alberto Manzi was born in 1924 in Rome. In 1942 he received his diploma as nautical engineer as well as school teacher. This dual approach: technical-scientific and pedagogical, would mark the entire life span of Alberto Manzi, helping to define his educational proposal. He participated at the II World as a submariner. After the war he graduated in biology and began his activity as a teacher (Maestro) - or as one could say as many teachers - as well as a writer for children.

THE PRISON TEACHER

Manzi's first experience as teacher is in a juvenile prison in Rome, at the re-education institution Aristide Gabelli. From 1946 - 47 he had to teach 90 students, ages 9 to 17, 18 of them analphabets. As he told Roberto Farné in an interview in 1997, he earned the right to do school challenging the head of the group of the boys with fists (good TV teacher, The Alberto Manzi lesson). The results were remarkable. At Gabelli, Manzi made a monthly newspaper, the first of its kind in a reformatory, and in collaboration with the young prisoners, was born the story of Grogh from which would come out the first novel: *Grogh, the story of a beaver*, published by Bompiani in 1950 and translated in 28 languages.

TEACHER OF THE POOR

The first half of the fifties represented an important moment of transition in the biography of Manzi. After the Roman experience in the reformatory Aristide Gabelli, he taught in Campagnano di Roma, as he prepared for his second degree in pedagogy, later specializing in psychology. In the early fifties, he is dedicated to the problems of education of the popular classes, and specifically to what had always been the crucial and unresolved issue of the modern and national educational system: the remoteness of rural areas, its inaccessibility. To the problem of rural schools, Manzi dedicated his notes, like 1950 the open letter to the Minister of Education and the 2 pages of "Thoughts to a school of today".

TEACHER IN SOUTH AMERICA

Surely a central event of those years, was the trip to Latin America. In the summer of 1955 by the University of Geneva Manzi received a commission

for scientific research in the Amazon rainforest. He went to study the ants, he would find out a lot more. It was the revelation of the social conditions of the rural Latin American world between the Andes and the Amazonas, and the beginning of a relationship, not without dangers, which would last for over twenty years. From then on, every summer, Manzi would go to teach 'the Indians' reading and writing, first alone and then with a group of college students.

The 'maestero' drew up a real program for the education for Latin American peasants and in its activities could count on the support of the Pontifical Salesian University. Accused from the governments of Perú and Bolivia of being a "Guevarist," he was considered "a persona non grata" and denied entering the countries. He will return to these places clandestinely, until 1984.

Of that experience are four novels left:

- *The moon in the barracks* (1974) and *El loco* (1979) published by Salani,
- *And it came Saturday* and *Gugù*, published posthum in 2005 (Iesa, Monticiani).

TEACHER IN TELEVISION

All this first phase of his educational activities culminated in 1960 with the famous transmission *It is never too late* (1960-1968). The director of RAI was looking for a teacher to teach adult analphabets. The idea of the program and title was from the ten general director of public education. *It is never too late* is considered to be one of the most important pedagogical experiments in adult education. He taught reading and writing to more than one million of Italians. In 1965, *It is never too late* was awarded in Tokyo, on indication from UNESCO, as one of the most successful television programs in the fight against illiteracy. In 1987 Manzi was called from the Argentinean government for a 60 hours training course for university professors in order to elaborate a "National Plan for Literacy" based on the experience *Non è mai troppo tardi*. Two years later Argentina received the international prize for the best literacy program in all South America from the United Nations.

TEACHER IN RADIO

In 1951 Manzi won a radio award for a children's play presented on the radio. Since then he had a collaboration with

“the radio for schools”, for forty years, from 1956 to 1996. 1951 he had already realized a novel with the narrative contributions of the young listeners, which was entitled *The Treasure of ZI CESAREO*. He had understood the potential of radio which was ideal to stimulate imagination and creativity. He was author of various transmissions and he also wrote and reworked fairy tales for children. In 1996, the 40 transmissions of *Curiosities of Italian Language* for Italians abroad and foreigners learning the Italian Language, were his last collaboration with Radio Rai.

RETURN TO SCHOOL

The school where Alberto Manzi returned at the end of his television experience was the same where he was already teaching for years and where he would remain until the achievement of the pension, Istituto Fratelli Bandiera in Rome.

Manzi's teaching was based on the idea that the student does not come to class with an empty head, ready to be filled by the master, and that teaching means at the same time content delivery and refutation of false beliefs. He wants to transform the school in respect of the child. In June 1975, teacher in elementary school, he refused to classify the students and explained the reasons for his decision: classify meant “to prevent a conscious learning, obliging to accept established definitions, educating to lies and falsehood...”. In 1977, Law No. 517 of August 4 imposed on teachers of elementary school the personal evaluation form of pupils. The teacher was required to fill out and keep updated a document had to be reported, “with systematic observations”, the maturation levels reached by children. The following year Manzi explained to the head master that he would complete the II quarter assessments only if they would demonstrate the validity of the vote and the classification in the growth process “in intelligence, in solidarity, in friendship” of the pupils. Alberto Manzi refused to fill out the evaluation forms and for two consecutive years, devised a stamp “DOES WHAT HE CAN. WHAT HE CAN'T HE DOES NOT DO.” From 1978 to 1980 he didn't follow the Ministry request and was referred to the Disciplinary Board of the Authority of Rome and was suspended from teaching for two months and half his salary was cut.

MANZI AS A WRITER

A few years after *Grogh* Manzi writes *Orzowei*, for certain the most successful book of the author; won the Andersen Prize in 1956, re-edited by Bompiani in the same year after leaving in 1955 to Vallecchi and translated into 32 languages. *Orzowei*, “the foundling” is the derogatory nickname of Isa, a white boy abandoned and growing up in a village of the Zulù tribe. His will be the fate of a man doubly excluded. Cast out from the world who also had welcomed lost child, Isa is closed to a return to the white community. *Orzowei* was an immense international success. In 1980, Rai will obtain 13 episodes and a film version. The theme song was played on 33 and 45. Thanks to this, Isa the *Orzowei* “...rejected by all and died with the hope that whites and blacks one day could live together and get along beyond the skin color and the tribe ...”, reached a resounding success, becoming the hero of a generation.

Alberto Manzi during his life has taken many and varied activities. Thanks to these he was assigned several awards, including international awards: for novels and stories, for radio, for television broadcasts, for pedagogical activities and writings for the youth. These awards are represented by different objects: antennas and nibs of gold, diplomas, plaques, trophies, medalsThe Collodi Prize for *Grogh, the story of a beaver* was the first of a long series, while the Bardesoni Prize for the comedy *Tupiriglio* was the last. Among international awards, the recognizing the UN stands for the program *It's never too late*. In 1962 he was also appointed Knight of the Order of Merit of the Italian Republic. After being part of the Commission for the Law in Defense of Minors 1993, the following year Manzi accepted the candidacy for mayor of the municipality of Pitigliano offered to him by the Democrats of the Left and becomes Mayor. 4th of December 1997 Manzi dies at the age of 73.

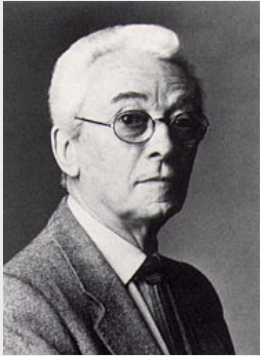
Manzi is one of the most important Italian writers for youth, he writes numerous tales and books with recurrent topics that are still important in our days: the relationship of men with their environment, values of freedom and solidarity, the refusal of any form of violence and racism.

BRUNO MUNARI (1907–1998)

SOURCES

WWW.COLLEZIONEBRUNOMUNARI.IT

WWW.MUNART.ORG



Bruno Munari was an Italian artist and designer with wide-ranging skills. He worked as a painter, sculptor, and industrial designer, he was a graphic artist and filmmaker, a writer and a poet. Munari believed in the power of simple design to stimulate the imagination. He is considered one of the greatest protagonists of art, design and graphics of the 20th century, always maintaining unchanged his whimsical creativity to support his constructive survey of form through visual and tactile experiments, and his great ability to communicate through words, objects, toys.

FUTURISM AND USELESS MACHINES

In 1927 he took part in the events of the second Futurism in Milan, participating in the collective of the Pesaro Gallery as well as the Venice Biennale and the Quadrennial in Rome and Paris in the thirties. 1933 he exhibited his “useless machines”, mechanical devices studied for their aesthetic characteristics, presented as “experimental models to test the possibility of aesthetic information of visual language.” From 1934 to 1936 he devoted himself to abstract painting.

ARTE CONCRETA AND ARTE POVERA

In 1948, together with A. Soldati, G. Monnet, G. Dorfles, he founded the MAC (Concrete Art Movement). In the fifties his research resumed with a series of “concave-convex sculptures” (1949–65), of paintings “positive-negative” (1951 onwards), of three-dimensional experimental models (Composition on the square; Travel Sculptures; Structures continuous), until the visual experiment obtained with polarized light (from 1953 onwards). In the mid 1950s–’60s Munari was concurrently in Milan with Arte Povera artists such as Lucio Fontana and Piero Manzoni.

DESIGN AS ART

Munari and many other Italian artists began to publish their ideas in journals, some which are still published, and to make art renegotiating the definition of the true artist as separate from an outmoded, elitist avant-gardism. Munari also published articles and books of essays about the overlap of art and design and the changing roles of art in contemporary society, perhaps the most famous being *Design As Art* (1971).

ILLEGIBLE BOOKS

His *Illegible Books* (1966), known also as *Unreadable Books*, were books made as visual treatments and experiments in form. They seek the same “harmonic relationship between all the parts” that his kinetics did. The same could be said about his children’s books.

CHILDREN’S BOOKS

Munari was interested in the interrelationship between games, creativity and childhood. For this reason, he strove to create children’s materials that would support the maintenance of the young mind’s elasticity and point of view. He did not believe in the inherent value of fantastical stories of princes and princesses, or dragons and monsters; instead, he wanted to create simple stories about people, animals, and plants that awaken the senses. Books with basic story lines and a humorous twist, brought to life by simple, colorful illustrations drawn with clarity and precision. For these works he won the Andersen award for Best Children’s Author in 1974, a graphic award in the Bologna Fair for the childhood in 1984, and a Lego award for his exceptional contributions on the development on creativity of children in 1986. In addition, he created other “pre-books,” to inspire a love of reading in pre-literate minds. Munari’s *Pre-Books* (*Prelibri*), first published in 1980, creating spaces for tactile play to encourage musing and contemplation. The twelve small *Pre-Books* are made of “materials like transparent plastic, cloth, paper, and wood. They are meant to tell stories through the visual, tactile, sonorous, thermal, and physical.”

LABORATORIOS

Munari was a fan of simplicity, which he believed was found in both nature and children. He eventually renounced his design career to lead international children's workshops he called *Laboratorios*, beginning in 1977. In these workshops, Munari focused on the positive creative imagination of kids "who come out of school happy and laughing," rather than dwelling on institutionalized Modern Art.

THE WORKSHOP SERIES

Roses in the Salad (see title picture) is one of a series of books referred to as The Workshop Series. This series, recently back in print, also includes *Drawing a Tree*, about plant symmetry, and *Drawing the Sun*, a meditation on shadow, color, and ways to portray the sun. The first four books in the Workshop Series were drawn from Munari's educational workshops offered for children.

XEROGRAPHIES

Another book in The Workshop Series, *Original Xerographies* (1977), which Munari described as "methodical studies performed on an electrostatic copier," was comprised of what he called original copies. To generate these copies, he moved paper around on the platen glass and turned the photocopied errors into discreet works of art. Munari's simple but brilliant concept was rooted in his love of play and movement. During the golden age of the Xerox Art movement (from the 1970s to the 1990s), many artists regarded Munari as the founding member of what is referred to in a 1979 photocopy art catalogue *Electroworks* as Generation One: the first artists to experiment with this new medium. His multi-faceted communication skills manifested in many different fields:

- Industrial communication and publicity.
- School books: *The eye and the art*. Art education for middle school, in 1992; *Sounds and ideas to improvise*; *Build creative paths in music education and teaching instrumental*, 1995.
- Games, graphical laboratories and research books.

Project Coordinator



Partners



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