

LESSONS LEARNT,
GUIDELINES,
AND SUGGESTIONS
FOR TEACHERS



LESSONS LEARNT,
GUIDELINES,

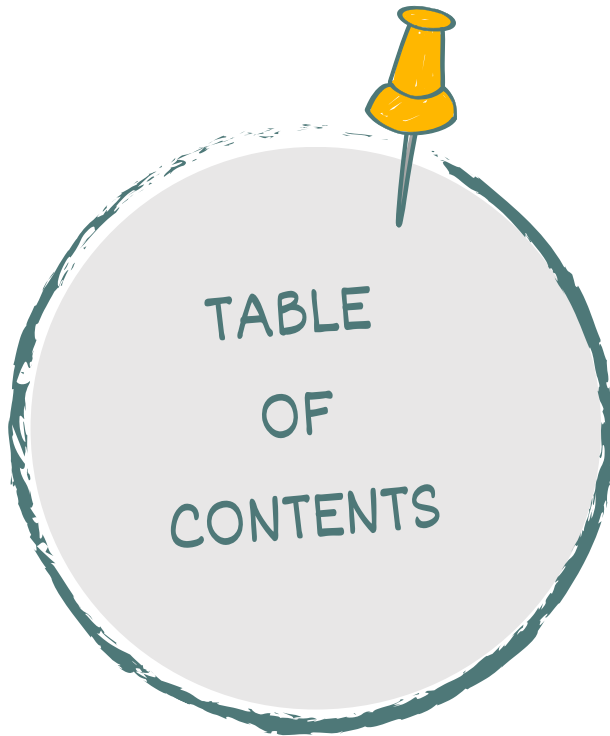
AND SUGGESTIONS FOR TEACHERS.

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www.crowdschool.eu

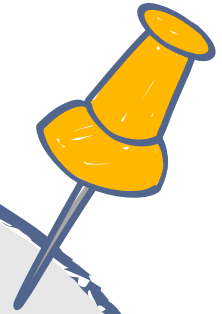


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1. INTRODUCTION.....	1
1.1 What is the <i>CrowdSchool</i> Project?.....	1
1.2 Partners.....	1
1.3 Project objectives.....	4
1.4 Project activities.....	5
1.5 How?.....	5
1.6 Building up Thesauri based on Wikidata.....	6
1.7 Results.....	8
1.8 Specific benefits for 1st grade students.....	9
1.9 Specific benefits for students with learning disabilities and attention deficit disorder.....	9
1.10 Discover the twelve <i>CrowdSchool</i> campaigns!.....	10
2. LESSONS LEARNT, GUIDELINES AND SUGGESTIONS FOR TEACHERS.....	14
2.1 Selective attention vs divided attention.....	14
2.2 Attention span.....	15
2.3 Lessons learnt, guidelines and suggestions for teachers.....	16
1. What aspects of the <i>CrowdSchool</i> project resulted beneficial for the students?.....	16
2. What are the skills and competences improved by the students thanks to the <i>CrowdSchool</i> Project?.....	18
3. Did the Project resulted beneficial also for students with disabilities and for students with attention deficit disorder?.....	19
4. What are the specific benefits, goals, and objectives of the process of tagging?.....	19
5. What to keep in mind when setting a campaign?.....	20
6. What do the stakeholders say about the <i>CrowdSchool</i> Project?.....	22
7. Why the Project promotes dialogue and inclusiveness?.....	22
8. Final suggestions for teachers.....	22





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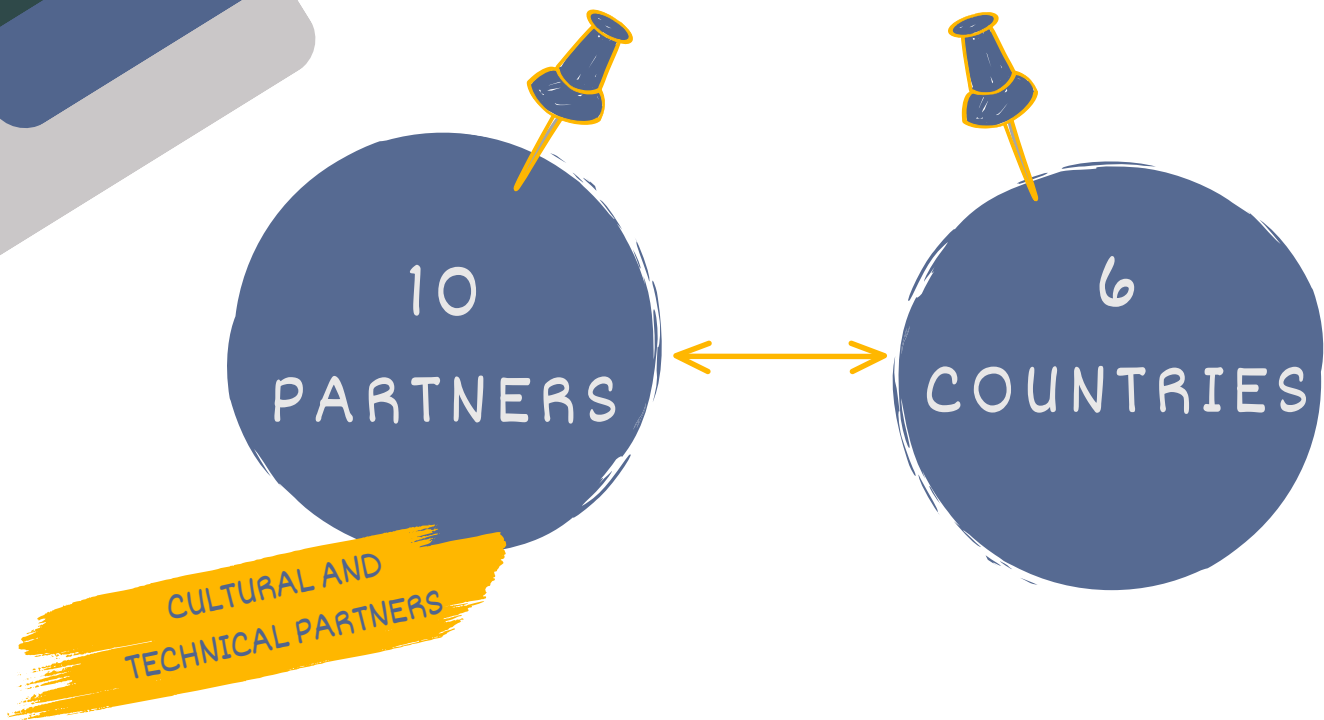
INTRODUCTION

* 1.1 What is the *CrowdSchool* Project?

The mass digitization process in the field of Cultural Heritage has made **available online** a huge number of **digital contents from European GLAMs** (galleries, libraries, archives and museums). Though, the **user experience** of these digital collections **is often poor**, due to **poor metadata quality**. Indeed, when the quality of the metadata is poor, software systems that index and avail themselves to the data may not find and return search results that otherwise would be appropriate for given search criteria. This is where the *CrowdSchool* Project comes in.

* 1.2 Partners

The Project brings together 10 EU partners from 6 countries. The partnership is composed of heritage, education, and technical experts, that, from 2020 to 2023, have **implemented strategies to enhance the learning experience of students**, while **promoting European cultural heritage databases**.



→ **Dédale (lead partner):** Dédale is a European research and production agency based in Paris (**France**), dedicated to culture, technologies and innovation. Its field of activity covers artistic production, local development, events management, research, consulting for public authorities and European institutions. The team has developed an expertise in a wide range of topics including cultural policies, ICT and cultural heritage, European digital libraries, innovative and creative learning, Tourism 2.0, new uses, mobile technologies, and smart cities. Dédale is particularly interested in innovation and new uses in sectors such as urban planning, new media, artistic creation, cultural heritage, and education.

In the *CrowdSchool* Project, Dédale plays the role of project coordinator and is also paired as 'cultural partner' to Moderato Montessori Barcelona school.

→ **European Fashion Heritage Association (EFHA):** The European Fashion Heritage Association is an international hub established in Florence (**Italy**) in 2014 to bring together and engage fashion institutions (both heritage organizations and creative industries) in the valorisation and exploitation of fashion heritage online.

Counting more than 40 member institutions from 13 countries, EFHA has become a thriving network, in which fashion brands, cultural institutions, researchers and creatives share experiences and best practices regarding Digital Transformation. In the *CrowdSchool* Project, EFHA offers its wide experience in the culture of fashion and plays the role expert in the management of terminologies in the cultural sector.

→ **Michael Culture Association (MCA):** Michael Culture Association is a not-for-profit organisation, based in Brussels (**Belgium**), created in 2007 and the only European trans domain network for Cultural Heritage. It aims to promote European cultural heritage by its digitisation and enhancing the network of European professionals working on digital cultural heritage. MCA gathers members and experts from GLAMs and Research Communities from the EU. MCA manages MUSEU- Hub - Services for museums going digital and aggregating for Europeana. In the *CrowdSchool* Project, MCA offers its wide experience in cultural projects, playing the role of 'cultural' partner and is paired to École Élémentaire Polangis.



→ **National Technical University of Athens (NTUA)**: The National Technical University of Athens is the oldest and a very prestigious educational institution of **Greece** in the field of technology. It has contributed unceasingly to the country's scientific, technical, and economic development since its foundation in 1836. The School of Electrical and Computer Engineering (ECE NTUA) is well known in Greece and abroad for the research achievements of its members, which is both of wide scope and high of standard.

In the *CrowdSchool* Project, NTUA offers its wide technical experience, providing all the IT support for adapting the *CrowdHeritage* Platform to the needs of the *CrowdSchool* Project.

→ **STePS**: StePS was established in 2013 and it operates in Bologna (**Italy**). STePS relies on the skills of a group of 6 experts with a thorough experience in the field of European programmes that cover education and training. STePS works nationally and internationally to promote educational research, reflection and rethinking of traditional learning approaches. The activities are centred on the joint development of innovative training resources aligned with the most pressing pedagogical concerns.

In the *CrowdSchool* Project, STePS offers its wide experience in cultural projects, playing the role of 'cultural' partner and is paired to Liceo Artistico Arcangeli.

→ **Stowarzyszenie Międzynarodowe Centrum Zarządzania Informacją (ICIMSS)**: The International Center for Information Management Systems and Services is a scientific association based in **Poland**, which pursues interests in information, education, and culture.

Its aim is also to promote intercultural communication and research.

ICIMSS participates in various projects financed by the EU. ICIMSS creates and administers several portals like Pictures-bank.eu, with over 90,000 online photos with historical descriptions and metadata.

In the *CrowdSchool* Project, ICIMSS offers its wide experience in cultural projects, playing the role of 'cultural' partner and is paired to Zespół Szkół Drogowo-Geodezyjnych i Licealnych (ZSDGiL).

PRIMARY SCHOOLS

→ **École Élémentaire Polangis** is a primary school, has 17 classes and approx. 430 pupils aged 6-11. The school is located in Joinville-le-Pont, a neighbouring town to Paris (**France**). Each year, the school offers its students to discover the cultural places of the capital. The school is also engaged in the certification label 'Génération 2024', an interministerial label which aims to develop links between scholar and sport worlds.

→ **Moderato Montessori Barcelona** is the first bilingual school, French-Castilian (with optional Catalan and English), dedicated to Montessori pedagogy in Barcelona (**Spain**). Located in the Putxet district, it aims to welcome around 60 children divided into 3 different classes according to their age: Children's Community class for children from 15 months to 3 years old, Children's house class for children from 3 to 6 years old, Primary class for children from 6 to 12 years old.

SECONDARY SCHOOLS

→ **Liceo artistico Francesco Arcangeli** is a secondary school based in Bologna (**Italy**), specialized in plastic and visual arts. Its educational offer includes curricula in Architecture, Furniture Design, Painting, Sculpture and Decoration, Heritage Conservation, Ceramics Design, Graphic Design, Audiovisual Media Arts. The school originates from the merging of two ancient schools in Bologna: the School of Arts, founded in 1885, and previous Liceo artistico, founded in 1923 (previously a lower course of the Academy of Fine Arts).

→ **Zespół Szkół Drogowo-Geodezyjnych i Licealnych (ZSDGiL):** August Witkowski Complex of Schools of Road Building, Surveying and General Education in Jaroslaw is a secondary school located in the south-east of **Poland**, attended by young open-minded people of many talents. The school has 800 students, aged 14-19. Students can choose to specialize in science and computer science, life sciences, languages, and humanities. The school also offers a unique specialization for students interested in a career in architecture.

* 1.3 Project objectives

The *CrowdSchool* Project relies on the results obtained by the previous **CrowdHeritage Project**, which created the online tool (Platform) named 'CrowdHeritage' using the power of crowdsourcing to improve the quality of metadata. *CrowdSchool* aims to propose a new model for:

- Enhancing schools with **new interactive methods for increasing the creative thinking skills** of students, taking benefit of the potential present in the digital repositories of cultural institutions
- Creating an **innovative tool for applying STEAM Education** (Science, Technology, Engineering, Arts and Mathematics) as an access point for guiding students' **inquiry, dialogue and critical thinking**

INQUIRY, DIALOGUE AND
CRITICAL THINKING

STEAM EDUCATION

NEW INTERACTIVE
METHODS

INCREASING THINKING
SKILLS OF STUDENTS

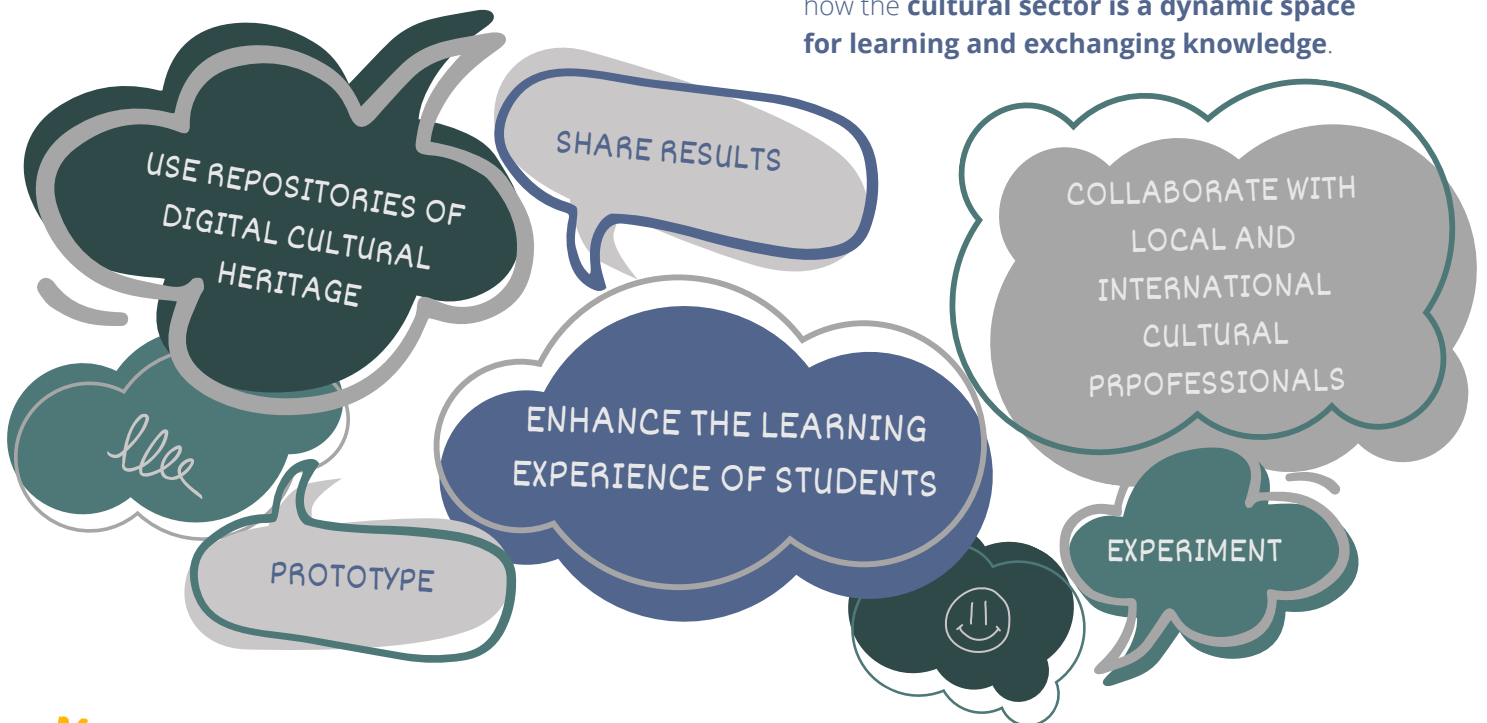


* 1.4 Project activities

The *CrowdSchool* Project aims at **enhancing the learning experience** of students **using the repositories of digital cultural heritage**. *CrowdSchool* builds on diverse digital repositories such as [Europeana](#).

CrowdSchool works with partner schools from the basis of the Project, to guarantee the success of the educational objectives.

CrowdSchool provides partner schools with a unique opportunity to **experiment, prototype, and share the results** of new ideas based on **creative collaborations with local and international cultural professionals**. And most importantly, schools are led to rediscover the creative, interactive, and fun aspects of the learning process. In this way, the Project is expected to demonstrate how the **cultural sector is a dynamic space for learning and exchanging knowledge**.



* 1.5 How?

The training model proposed by the *CrowdSchool* Project consisted of the following steps:

- Each **school was paired to a cultural partner**
- **Teachers selected some topics**, according to their student's interests, class curriculum, and mission of their school, and passed the selected topics to the cultural partner they were paired to
- Cultural partners **selected the digital images and created digital collections** based on digital cultural heritage repositories (such as Europeana), according to the topics and interests suggested by teachers. As far as the secondary schools involved, the process of selecting the images was done by the cultural partners and teachers/students together, being secondary school students sufficiently digitally skilled (this task was on the contrary not suitable for primary school children)

- Jointly, the teams of teachers/cultural partners worked together **identifying the terminology** to be used for describing each collection (e.g. terminology for food, for animals, sports, architecture, etc.)
- Cultural partners worked to **set up the Thesauri** needed for each collection. Thesauri were **based on Wikidata** (see below for more details on this phase)
- **Thesauri** were **translated** into the languages of the Project's partners
- Collections and **Thesauri** were **uploaded** onto the *CrowdHeritage* Platform, set up by NTUA
- **Students** started the **annotation campaigns**, enriching the collections using the fields available in the *CrowdHeritage* Platform (tagging, geotagging, and free-text fields)
- **Annotations** done by primary schools students **were revised by students of the other primary school** involved in the Project (École Élémentaire Polangis students revised annotations made by Moderato Montessori Barcelona students and vice versa). Annotations done by high school students were revised by students of the other high school involved in the Project (Liceo Artistico Arcangeli students revised annotations made by Zespół Szkół Drogowo-Geodezyjnych i Licealnych (ZSDGiL) and vice versa). This process **encouraged the development of critical thinking capacity in the revisers' group**
- All process involving students were organised according to a **gamification scheme**
- Finally, in order to guarantee the sustainability of the system and pave the way to further annotation campaigns, the **students became the mentors of their younger colleagues** of the following school year, supporting them in the annotation and validation process on a different educational theme

1.6 Building up Thesauri based on Wikidata

Wikidata is a **collaboratively edited multilingual knowledge graph** hosted by the Wikimedia Foundation. It is a common source of **open data that anyone can use under the CC0 public domain license**. It is a document-oriented database, focused on items which represent any kind of topics, concepts, or objects. Each item is allocated a **unique, persistent identifier, prefixed with the upper-case letter 'Q'** (known as a 'QUID'). The persistent identifier **enables to identify the topic that the item covers, to be translated without favouring any language**.



EXAMPLE

The item 'food' has a persistent identifier which is Q2095, and is found at www.wikidata.org/wiki/Q2095.

Users interested in the item 'food', check in Wikidata if the item 'food' exists, and if it exists in their language. If the item 'food' exists but not in the language they are interested in, the user can translate the item, and the system automatically assigns the same persistent identifier Q2095 to the translated item. This is why Wikidata does not favour any language: because it identifies a concept, an idea, and this concept/idea can be translated into any language, and the translation remains under the same identifier.



In Library and Information Science (LIS), a **Thesaurus is a kind of controlled vocabulary**. The *CrowdSchool* Project created **a specific Thesaurus for each campaign** (e.g. a specific Thesaurus for the Olympics and sports, one for Animals, one for Food, one for the History of Costume, one for Architecture, one for Gaudi, etc.). The cultural and technical partners of the Project helped the teachers to create the Thesauri, which were then used by the students to complete the 'tag' field of the images of the different campaigns. **The Thesauri are all based on Wikidata** because, as explained above, this tool offers the possibility of having **word lists instantly available in many languages**.

The construction of the Thesauri was done in this way:

- First, the **images** of each campaign **were analysed to identify** which **terms** the students would need to describe the images
- For each campaign, the terms identified were **entered into a dedicated Excel file** with several columns, organised into hierarchies and groups, according to the different levels of the Thesaurus, while the last column showed the **URL corresponding to the QUID** of the single item (e.g.: for the item 'food' the Excel file shows the QUID Q2095 and the URL www.wikidata.org/wiki/Q2095).
A few examples:

EXCEL FILE FOR THE 'ARTS AND FOOD IN THE CENTURIES' CAMPAIGN (EXCERPT)

1st level	2nd level	3rd level		4th level	5th level	Wikidata QUID
Food						www.wikidata.org/wiki/Q2095
	Vegetable					www.wikidata.org/wiki/Q107558649
		Fruit vegetable				www.wikidata.org/wiki/Q1470762
				Courgette		www.wikidata.org/wiki/Q7533
					Courgette flower	www.wikidata.org/wiki/Q6835370



EXCEL FILE FOR THE 'OLYMPIC SPYRIT' CAMPAIGN (EXCERPT)			
1st level	2nd level	3rd level	Wikidata QUID
Motorsport			www.wikidata.org/wiki/Q5367
	Motorcycle racing		www.wikidata.org/wiki/Q17163326
		Motocross	www.wikidata.org/entity/Q215862

- It was then **checked whether the words (= items) were present in Wikidata**
- If an item was already present in Wikidata, it was **verified that the description was complete** and present in all partner languages. When necessary, descriptions were completed and translated into the missing languages
- If items were not present in Wikidata, they were **inserted and then translated** into the various partners' languages
- The Wikidata link of each item was inserted into the corresponding Excel file
- **Excel files** containing the various Thesauri were **imported into the CrowdHeritage Platform** and associated with the relevant campaign

1.7 Results

The key outcomes obtained by the *CrowdSchool* Project are:

- Training **teachers to use the CrowdSchool tools**
- **Customizing training materials** to the purposes of targeted **educational communities**, using digital culture heritage to respond to their specific training objectives
- **Acquiring Key Competences**, through a creative and critical thinking approach, such as:
 - Learn how to read an image
 - Support students in expressing themselves orally and in writing to describe, explain and argue
 - Enrich the lexicon and learn how to use it appropriately
- Acquire the ability to cooperate
- Acquire the ability to participate in a project
- Develop the ability to use digital technologies to conduct research or produce content independently
- Develop the ability to use digital technologies to carry out research or produce content independently (writing using a keyboard)
- Promoting co-creation and collaboration of teachers/children with cultural heritage organisations
- Increasing awareness of the European teachers' community on the relevance of creative and critical thinking capacity, using an interdisciplinary approach combining science and humanities



* 1.8 Specific benefits for 1st grade students

First graders have achieved **remarkable learning outcomes** because of this Project. In fact, the Project taught children **how to cooperate** (a fundamental skill that needs to be learned as early as possible in life).

Teachers in the two elementary schools involved in the Project had the children work in pairs, asking them to discuss the pictures they saw, exchange ideas, explain why they agreed or disagreed with the other child's ideas, etc.

Teachers also changed pairs so that children could experience group work with more children and compare different ways of reasoning.



* 1.9 Specific benefits for students with learning disabilities and attention deficit disorder

The Project proved **very effective for students with learning disabilities and attention deficit disorder**, who usually find it very difficult to deal with the use of language, especially written language, and traditional teaching tools.

Teachers verified that during the various stages of the campaign annotation process, students with learning disabilities and attention deficit disorder **showed extraordinary interest, attention, and engagement.**

The teachers believe that the increased interest and engagement and the **excellent results and progress in language** demonstrated by these students is due to the fact that the *CrowdHeritage* digital Platform has **lowered** the level of performance **anxiety** that these students normally have **toward written language.**

In addition, the fact that images in the *CrowdHeritage* digital Platform can be annotated through 'tags' made these students feel comfortable and at the same level as their classmates, without the fear of falling behind.

PLEASE NOTE THAT THESE ARE
INTERNAL CAMPAIGNS:
ACCESS TO THEM AND ANNOTATION
IS RESTRICTED TO THE PROJECT'S
PARTNERS ONLY

* 1.10 Discover the twelve *CrowdSchool* campaigns!

Partner schools from France, Italy, Spain, and Poland have worked to achieve the Project's main goal: **enhance the learning experience of students while promoting European cultural heritage digital repositories**. Each partner school, working with its twinned cultural organization, selected several images, grouped in thematic campaigns.

According to each schools' needs, campaigns have been divided into sub-groups called **'collections'**. The selected images were used to reach various educational goals, according to teachers' needs. The **campaigns themselves functioned as pilot activities**, whose final findings and materials have been **disseminated** to the targeted communities and stakeholders.

CAMPAIGNS SELECTED BY
PRIMARY SCHOOLS

CITIES AND LANDSCAPES

School partner:

École Élémentaire Polangis (France)

Cultural partner:

Michael Culture Association (Belgium)

Description:

This campaign presents cities and landscapes, including geography, buildings, history, and art history



Moulin de Craca, Plouézec,
Côtes-d'Armor, France.
Deutsche Fotothek, Germany.
In Copyright. Educational use permitted.
www.europeana.eu/item/188/

OLYMPIC SPIRIT

School partner:

École Élémentaire Polangis (France)

Cultural partner:

Michael Culture Association (Belgium)

Description:

This campaign presents the Olympism including the Olympic cities, Olympic sports and History



Olympic poster of the 1948
London Summer Olympics,
Walter Herz, 1948,
by McCorquodale en Co Ltd, 1948.
The Dutch Olympic Committee,
Dutch Sports Federation,
Netherlands.
Public Domain.

www.europeana.eu/item/2021648/

ENDANGERED SPECIES

School partner:

Moderato Montessori Barcelona (Spain)

Cultural partner:

Dédale (France)

Description:

This campaign features images of endangered animals and species that are very likely to become extinct soon



Zoological Society of London
 an elephant.
 Coloured etching.
 Wellcome Collection,
 London (United Kingdom).
 CC BY.
www.europeana.eu/item/9200579

FOOD

School partner:

Moderato Montessori Barcelona (Spain)

Cultural partner:

Dédale (France)

Description:

This campaign features various types of foods, prepared dishes, and food in art



Orange-Growing Packaging of
 "Sunkist" oranges from California IA.
 Austrian National Library, Austria.
 Public Domain.
www.europeana.eu/item/2059502

GAUDI

School partner:

Moderato Montessori Barcelona (Spain)

Cultural partner:

Dédale (France)

Description:

This campaign features images of Gaudi's work, such as monuments, furniture and other designs created by Gaudi



Casa Batlló, Barcelona (Spain).
 Photograph by Uwe Gerig, 2012.
 Deutsche Fotothek, Germany.
 In Copyright,
 Educational Use Permitted.
www.europeana.eu/item/440

MUSICAL INSTRUMENTS

School partner:

Moderato Montessori Barcelona (Spain)

Cultural partner:

Dédale (France)

Description:

This campaign features music instruments, including string instruments, wind instruments and brass instruments



Gramophone (1877-1931).
 Thomas Edison (manufacturer).
 Musical Instrument Museum, Brussels
 (Belgium).
 CC BY-NC-SA.
www.europeana.eu/item/09102

CAMPAIGNS SELECTED BY
SECONDARY SCHOOLS

ARTS AND FOOD IN THE CENTURIES

School partner:
Liceo Artistico Arcangeli (Italy)
Cultural partner:
Steps (Italy)
Description:

The images collected here tell the story of the relationship between man and food, of how food has been used by men not only for nourishment but also to express and consolidate their bond with other men and with divinity. The images in these campaigns also describe how food has been prepared, served, consumed and traded over the centuries. They also tell the story of the cultivation and production of raw materials

Still life with fruits
by Frants Diderik Bøe.
Nationalmuseum Sweden, Stockholm
(Sweden).
Public Domain.
www.europeana.eu/item/2064116



CLOTHING AND GARMENTS IN THE ARTS

School partner:
Liceo Artistico Arcangeli (Italy)
Cultural partner:
Steps (Italy)
Description:

The collections in this campaign illustrate the evolution of fashion through clothes and ornaments represented in the works of art



Portrait of Grand Duchess Bianca Capello
(1548-1587),
by Scipione Pulzone called Goetano, 1584.
Kunsthistorisches Museum, Wien (Austria).
CC BY-NC-SA.
www.europeana.eu/item/15502



ARCHITECTURE

School partner:
Zespół Szkół Drogowo-Geodezyjnych
i Licealnych (Poland)
Cultural partner:
ICIMSS (Poland)
Description:

This campaign includes different architectural styles: Romanesque, Gothic, Secession, Modernism. Buildings intended for worship, private buildings and buildings for public use are shown. The collection also includes many architectural details of these styles



The Łazienki Palace, in the area of the Łazienki Park in Warsaw (Poland).
In copyright by the International Center For Information Management Systems And Services (ICIMSS).
www.europeana.eu/en/item/08534



FOLK COSTUMES

School partner:

Zespół Szkół Drogowo-Geodezyjnych i Licealnych (Poland)

Cultural partner:

ICIMSS (Poland)

Description:

The collection in this campaign includes the folk costumes of several selected countries. Folk costumes show the cultural richness and variety of costumes in individual regions

Skirt bag with over stitching and tin wire outlines. From Lillherdal, Härjedalen. The Nordic Museum, Stockholm (Sweden). Photograph by Birgit Brånvall, 1998.

CC BY-NC-ND.

www.europeana.eu/it/item/2048211/

48211/



CITIES AND LANDSCAPES

School partner:

Zespół Szkół Drogowo-Geodezyjnych i Licealnych (Poland)

Cultural partner:

ICIMSS (Poland)

Description:

This campaign features landscapes and gardens ranging from mythical gardens such as Paradise, to ancient gardens as the gardens of Babylon, to present day gardens. The campaign features different types of gardens and plants

Abbey of Saint-Martin-du-Canigou, Casteln (France).

Photograph by

Paul M.A. Maeyaert, 2011.

CC BY-SA.

www.europeana.eu/it/item/2058612

UKRAINIAN TOWELS

School partner:

Zespół Szkół Drogowo-Geodezyjnych i Licealnych (Poland)

Cultural partner:

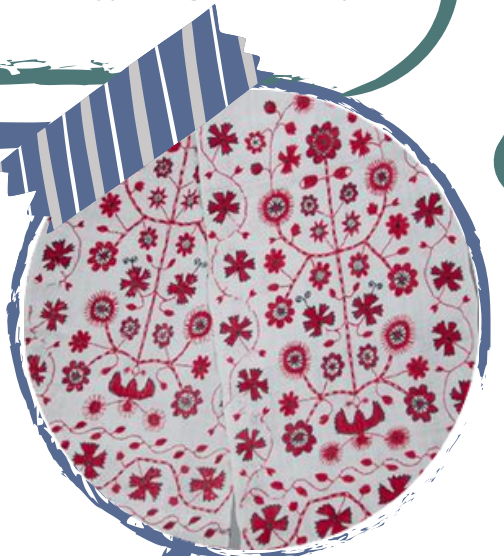
ICIMSS (Poland)

Description:

The collection in this campaign feature cross-stitched Ukrainian towels that continue to have symbolic meaning at different stages of life, from birth to death

Embroidered towel representing the tree of life. White, red, gray. Ethnographic collection "Krovets". Public domain.

www.europeana.eu/en/item/2048095





2.
LESSONS LEARNT,
GUIDELINES
AND SUGGESTIONS
FOR TEACHERS

* 2.1 Selective attention vs divided attention

The *CrowdSchool* Project has implemented the proposed methodology both in primary schools and in secondary schools. **Students' experience with the *CrowdSchool* Project and *CrowdHeritage Platform* has been different, according to their age.** Indeed, the students interacted and used the digital tools of the Platform based on their age-appropriate skills. Consequently, the teachers have prepared appropriate lessons and learning objectives according to the age groups.



Some authors have divided attention into **five components** (Sohlberg & Mateer 1987, 2001, 2010): [1]

- **focused attention** (refers to our ability to focus attention on a stimulus)
- **sustained attention** (the ability to attend to a stimulus or activity over a long period of time)
- **selective attention** (the ability to attend to a specific stimulus or activity in the presence of other distracting stimuli)
- **alternating attention** (the ability to change focus attention between two or more stimuli)
- **divided attention** (the ability to attend different stimuli or attention at the same time).

→ **Selective attention** consists in the ability to select and, precisely, pay attention to a single stimulus present in one's environment. This process can therefore be considered as a 'filter' capable of selecting the incoming information, deciding which ones should be processed, because they are relevant for a task, and which, on the contrary, ignored because they are irrelevant. Selective attention allows the implementation of an effective perceptual selection of information (Hanania & Smith, 2010; Plude et al., 1994). Humans develop selective attention after 7 years of age, i.e. following the maturation of the frontal lobes.



On the contrary, children until the age of 6 have a markedly **distributed and divided attention** mechanism, even when asked to focus on only one very specific aspect of the environment.

The consequence of this 'developmental progression' is that **adults are good at selecting and remembering information** they were told to pay attention to, ignoring everything else. While **4-6-year-olds have the tendency to select everything that is shown to them** (that is, to notice everything, which is equivalent to not selecting anything), regardless of the degree of relevance of the stimulus for the purposes of the task.

This difference between distributed attention and selective attention was very **evident in the tasks entrusted to primary school children** and in **those assigned to the secondary school students** involved in the Project. The observations collected by the teachers during the Project regarding the two different types of attention in children and adolescents have led to very important and interesting conclusions and suggestions for teachers who in the future will want to adopt the methodologies proposed by the *CrowdSchool* Project.



2.2 Attention span

The Project proved that **attention span** got highly **increased** in primary school students respect to standards. It is renowned that in a child, attention lasts less than in an adult. For example, a 6–7-year-old becomes distracted after about 15 minutes, while a 13–15-year-old can pay attention continuously for about 30-40 minutes and a 16+ year old for about 32-50+ minutes [2].

Nevertheless, the Project proved that primary school students and even primary school students with learning disabilities or attention deficit disorders, were **able to interact with the digital Platform much longer than during any other traditional lesson**.

[1] Sohlberg MacKay M., Mateer Catherine A., 1987, 2001, 2010

[2] www.cnld.org/how-long-should-a-childs-attention-span-be/



2.3 Lessons learnt, guidelines and suggestions for teachers

Based on the feedback received by the different age groups, the present document proposes **common guidelines and suggestions for all ages** and **further guidelines** and recommendations **specifically for each age group**. Next to each recommendation and suggestion you will find an icon indicating if these are:

→ suitable for **all ages**:



→ suitable for **secondary** school students only:



→ suitable for **primary** school students only:



WHAT ASPECTS OF THE CROWSCHOOL PROJECT RESULTED BENEFICIAL FOR THE STUDENTS?



- Students felt **more self-confident** thanks to the process of commenting the images, to the process of revising other students' annotations, and thanks to participating in an international project
- Students felt being part of an **international community**, even primary school children
- Students felt proud to **participate in an international project**
- Students enjoyed and felt enthusiastic about **virtually meeting students of other European countries**
- Students **enjoyed competition**
- Students enjoyed and felt enthusiastic about **revising each other's annotations**
- The Project's Platform is **suitable for all ages**: primary school students, secondary school students and even adult students, that shall use the Platform while continuing education at university
- Students experience a **new and innovative methodology**, different from what a common curriculum offers
- **Collections are universal** and can be used in different ways and subjects

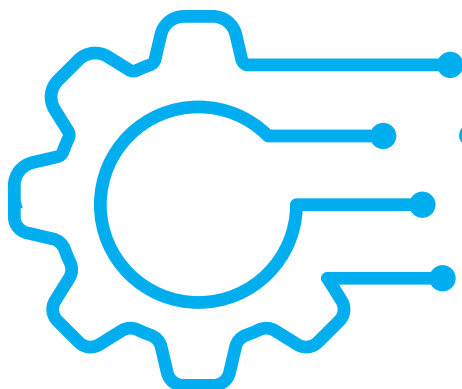


- Secondary school students got particularly engaged when asked to revise tagging made by **Artificial Intelligence**



WHAT ARE THE SKILLS AND COMPETENCES IMPROVED BY THE STUDENTS THANKS TO THE CROWDSCHOOL PROJECT?

- The Project supports the **4Cs of the 21st century**: Critical thinking and Creative Thinking, Cooperation, Communication [3]
- Students **learn to work in groups** with international students, thus strengthening the 4Cs outside their class and outside their country
- Working in groups with foreign students rises young people **awareness of each other cultural characteristics**, and makes young people respectful of each other traditions and culture
- The Project supports and rises students' **cultural awareness**
- The Project helps students **broadening** their **horizons** and becoming **more open and curious**
- Students learn to use **new digital features on computers**: nowadays, children get in touch with technology at a very early age by using mobile phones and tablets, while at a very early age they are less used to computers. The Project has supported young children in getting to know a more complex device such as a computer and its software



4Cs of the 21st century

Cultural awareness

Broadening horizons

New digital features

[3] In 2002 the Partnership for 21stCentury Skills (www.battelleforkids.org/networks/p21) was created for learners to acquire knowledge and skills needed to thrive in a world where change is constant and learning never stops. P21's mission is to serve as a catalyst for 21stcentury learning by building collaborative partnerships among education, business, communities and government leaders. This led to the development of the Framework for 21st Century Teaching and Learning. The 4Cs are included in the Framework as part of Learning and Innovation skills and competences children need thrive in work and life. The 4Cs are: Critical thinking (finding solutions to problems); Creativity (thinking outside the box); Collaboration (working with other); Communication (conveying ideas). See: static.battelleforkids.org/documents/p21/p21_framework_brief.pdf

DID THE PROJECT RESULTED BENEFICIAL ALSO
FOR STUDENTS WITH DISABILITIES AND
FOR STUDENTS WITH
ATTENTION DEFICIT DISORDER?



- The *CrowdHeritage* Platform resulted very beneficial for students with **learning disabilities** and **attention deficit disorder**, who usually find it very difficult to deal with the use of language, especially written language, and traditional teaching tools (see paragraph n. 1.9)
- The Platform increases students' attention: students tend to **pay a lot more attention at the images** provided through the Platform and thanks to the task of tagging assigned to them



WHAT ARE THE SPECIFIC BENEFITS,
GOALS, AND OBJECTIVES
OF THE PROCESS OF TAGGING?



- Tagging is a **funny way** for students to **learn by playing (gamification)**
- Tagging is an **interesting, involving** and **engaging challenge**
- Students find the tagging process **involving and creative**
- Tagging motivates students to learn and to **deepen their knowledges** of a specific subject
- Students are **proud** when their **taggings are upvoted** (thumbs-up) by their peers
- By tagging and by observing the images, students learn **new words and terminologies** both in their mother tongue or in foreign languages they study
- Students find the **geo-tagging function** a **creative feature**
- Teachers find the geo-tagging function **helpful** to support (also) **history and geography** lessons
- In the *CrowdSchool* Project, collections are made available in the all partners' languages: Spanish, French Italian, Polish, English, and it's **easy to switch from a language to another**. Students found useful and enjoyable switching from a language to another and learning new words in another language

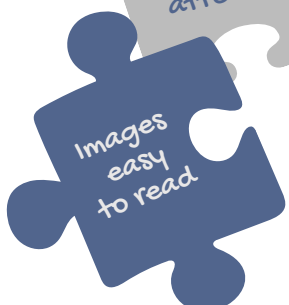
5

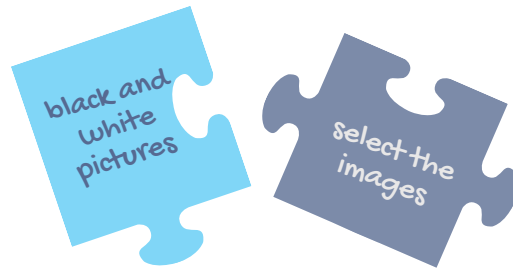
WHAT TO KEEP IN MIND WHEN SETTING A CAMPAIGN?

- Before starting the tagging campaign/s, **offer your students a lesson on the selected topic/s**. It can be a workshop, a visit to a museum, etc.
- Tagging may need **pre-teaching certain vocabulary** (basic or advanced, depending on students' age)
- **Take time to create your own Thesaurus** for your campaign/s, according to the teaching objectives you want to reach and to your students' age. This implies having a clear idea of your teaching objectives well in advance
- **Check** that the **tool** is **working properly** before using it. The minutes spent fixing technical problems are minutes when you easily lose your class
- **Have several formats for using the Project's Platform**: in groups to encourage discussion, individually but under supervision to check knowledge, or in complete autonomy
- Encourage students to **go beyond the vocabulary listed** in the Thesaurus by using the free-text field to comment and describe freely, without constraints of pre-established terminology
- **Do not choose the campaigns too quickly** and simply on the basis of the theme of interest: spend time in choosing your campaigns according to your class curriculum and medium/long term objectives
- **Test the Platform** and **learn how to use it** before having your students using it



- Carefully select the images that best **suit your educational purposes**
- The topic of the collection/s shall **suit your students' interests**
- As young students have a **diffused attention**, they will get easily distracted by the various elements of the images they will look at. To **make their attention more focused**, you shall:
 - Take **time** to choose the campaigns suitable for your students' age
 - Take time to **choose all the images** within each camping to avoid making students uncomfortable in front of complex images
 - Before setting the campaign, we recommend organizing a **pilot campaign** with just a few images, to understand how your students react to the images you have selected and how their analysis skills work according to their age
 - Setting a pilot campaign is also useful for the teacher to understand if the images selected correspond to their **teaching needs**
- **Choose images** that are **easy to read** and understand. For example, if an image represents a poster/an advert, it will contain images and text too, and often these elements will be displayed to suit with specific communication purposes. All such elements will catch your students' attention and imagination and will not facilitate your young students' attention on the elements you want them to focus on





- Be aware, because a lot of **images can result complex** under this point of view
- **Black and white pictures** might result boring for young students, or less engaging, or more difficult to understand and to observe. Reduce the number of B/W images and offer special support to students that target B/W pictures
- Plan one or two sessions for the youngest students to **discover the Platform** (if possible, with student tutors)
- Take time to **create your own Thesaurus** for your campaign/s, according to the teaching objectives you want to reach and to your students' age. This implies having a clear idea of your teaching objectives well in advance
- **Prepare the terminology well in advance** so that the necessary vocabulary is available to the pupils. This will avoid a lot of inconvenience and time lost during sessions
- Give each pupil an **individual access code** to the Platform: thus, they can access the Platform independently outside school hours if they wish to, and continue the annotation activities (many will be eager to show their new skills to their parents, siblings and relatives)



- Working with secondary school students means that you might want to **involve your students in the search and selection of the images** to be included in each campaign (under your supervision)
- Working with secondary school students means that you might want to **involve your students in the process of setting up the Thesaurus** for each campaign (under your supervision)
- Having the students selecting the images and setting up the Thesaurus for each campaign by themselves, means involving them in a deeper and more active process of learning: being in charge of this important task will make them feel **more responsible and more involved**; they will also observe the images under a **more 'active' and profound glance**
- Furthermore, setting up their Thesaurus based on Wikidata will support their **logical and analytical skills** (Wikidata requires certain specific hierarchical and logical schemes)



6

WHAT DO THE STAKEHOLDERS SAY ABOUT THE CROWDSCHOOL PROJECT?

- Students' parents felt the Project being very **useful** in **supporting teaching objectives**
- Students' parents felt the Project methodology very **innovative**
- Students' parents felt **enthusiastic** their sons and daughters participating in an **international project**
- During dissemination events, teachers at other schools and other schools' directors said to be very interested in setting up campaigns **using the Platform**
- The directors of the schools involved in the Project said to be **proud** of their students' results and proud of the school participating in an international project



7

WHY THE PROJECT PROMOTES DIALOGUE AND INCLUSIVENESS?



- Because the *CrowdHeritage* Platform **overcomes language barriers**: the process of tagging is sustained by Thesauruses based on Wikidata: this implies that users see the tagging in their own mother tongue. Consequently, it is easy for students to get in contact with each other and to revise each other's work even if they belong to different countries and even if they don't speak any common language
- Because through cultural heritage repositories (Europeana in particular) students are able to **approach and study many topics**, thanks to the millions of items included in such repositories
- Because the *CrowdHeritage* Platform supports **interactions with diverse groups**
- Because students are encouraged in practicing **active listening**
- Because it **supports the development of cultural intelligence**, i.e., the ability to interpret the stranger's behaviours the way the stranger's compatriots would (Muzychenko 2008)

8

FINAL SUGGESTIONS FOR TEACHERS



- **Organise online meetings** between the **students** of the **classes that are twinned** in the Project: the students are curious to get to know their 'foreign' classmates and will be delighted with this experience. The occasion could also be interesting for exchanging knowledge about local customs, traditions
- **Organise online meetings** between **teachers** of **twinned classes**, to exchange ideas about the Project, the campaigns, the difficulties you encounter, the possibilities offered by the Project, to create together, etc.

COOL



The CrowdSchool Project Partners are:



dedale.info



icimss.edu.pl



fashionheritage.eu



liceoarcangeli.edu.it



michael-culture.eu



tdgjar.edu.pl



ntua.gr



ecole-elementaire-polangis



stepseurope.it



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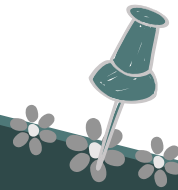
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LESSONS LEARNT, GUIDELINES, AND SUGGESTIONS FOR TEACHERS

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