CrowdSchool

Selection of educational themes and preparation of the multilingual terminologies

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Pictures

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1.   Introduction

The mass digitization process in the field of Cultural Heritage has made available a huge number of contents in European galleries, libraries, archives, and museums. Still, browsing the records interesting for the students to perform learning tasks remains limited by shortage of metadata describing the cultural objects themselves. This is where CrowdSchool comes in.

The project brings together heritage, education, and technical experts. From 2020 to 2023, CrowdSchool has been implementing strategies to work with partner schools and achieve the project's main goal: enhance the learning experience of students while promoting European cultural heritage databases.

The original CrowdHeritage project (https://crowdheritage.eu) had created an online tool using the power of crowdsourcing to improve the quality of metadata. Following this project, 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.

CrowdSchool builds on diverse digital repositories such as Europeana. The project has enhanced the learning experience of students using the repositories of digital cultural heritage. CrowdSchool works with partner schools from the basis of the project, to guarantee the success of the educational objectives.

CrowdSchool provides educational partners 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, they 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.

The training model proposed by the CrowdSchool project consists of different steps:

- Teachers select some themes of their interest, according to the mission of their school.
- Cultural professionals identify digital collections interesting for preparing lessons, research, workshops focusing on those themes.
- Jointly the teams work together for defining the terminology to be used for describing the collections for that specific theme. The terminology is translated.
- The students start the annotation campaign, enriching in a creative way the educational content of the collections, and making them available also to all the students who in future will perform a similar query.
- Annotations done by the students at each school are also revised by another class of a different country, encouraging in this way the development of critical thinking capacity in the revisers' group. All the process will be organised according to a gamification scheme.
- Finally, to guarantee the sustainability of the system and pave the way to further annotation campaigns, some of the students become the mentors of their younger colleagues of the following school year, supporting them in the annotation and validation process on the same or on a different educational theme.

2.   Selection of Educational Themes

Within the project lifetime, 65 collections have been identified, organised across 12 different annotation campaigns. The following list presents the campaign and collections, providing the link where the materials can be found on the CrowdSchool section of the CrowdHeritage platform:

France
- Cities and Landscapes
  https://crowdheritage.eu/en/cities-polangis
  The collections in this campaign present cities and landscapes including geography, buildings, history, and art history. They are:
  - Cities   https://crowdheritage.eu/en/crowdschool-pilot/collection/616ebe17ef3dfb02822d3702
  - Rural landscapes https://crowdheritage.eu/en/crowdschool-pilot/collection/616ebea3ef3dfb02822d3725
  - Monuments   https://crowdheritage.eu/en/crowdschool-pilot/collection/616ebeffef3dfb02822d373e
  - Seasides   https://crowdheritage.eu/en/crowdschool-pilot/collection/616ebfa1ef3dfb02822d378c
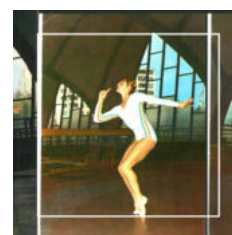
- Olympic spirit
  https://crowdheritage.eu/en/olympic-polangis
  The collections present the Olympism including the Olympic cities, sports, and History.
  - Olympic Spirit   https://crowdheritage.eu/en/crowdschool-pilot/collection/616ebd65ef3dfb02822d36bc
  - Olympic Sports   https://crowdheritage.eu/en/crowdschool-pilot/collection/616ebc9aef3dfb02822d3690
  - Olympic Games in France   https://crowdheritage.eu/en/crowdschool-pilot/collection/616ebdb9ef3dfb02822d36f0

Italy
- Arts and Food in the Centuries
  https://crowdheritage.eu/en/food-arcangeli
  The collections illustrate the story of the relationship between man and food as represented in the works of art:
  - Before XII sec   https://crowdheritage.eu/en/crowdschool-pilot/collection/616e8e1bef3dfb02822d2932
  - XIII sec   https://crowdheritage.eu/en/crowdschool-pilot/collection/616e903fef3dfb02822d2abb
  - XIV sec   https://crowdheritage.eu/en/crowdschool-pilot/collection/616e91c3ef3dfb02822d2b0c
  - XV sec   https://crowdheritage.eu/en/crowdschool-pilot/collection/616e9686ef3dfb02822d2ba8
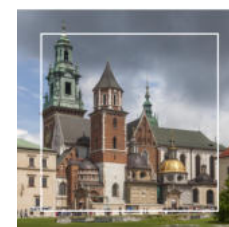 - XVI sec   https://crowdheritage.eu/it/crowdschool-pilot/collection/616e989fef3dfb02822d2c93

- o XVII sec   https://crowdheritage.eu/en/crowdschool-pilot/collection/616ea5d4ef3dfb02822d2f1f#/
  - o XVIII sec   https://crowdheritage.eu/en/crowdschool-pilot/collection/616ea98aef3dfb02822d3162#/
  - o XIX sec   https://crowdheritage.eu/en/crowdschool-pilot/collection/616eb1d0ef3dfb02822d3302#/
  - o XX sec   https://crowdheritage.eu/en/crowdschool-pilot/collection/616eb537ef3dfb02822d3441#/

- Clothing and Garments in the Arts
  https://crowdheritage.eu/en/fashion-arcangeli
  The collections illustrate the story of the relationship between man and food as represented in the works of art:
  - o Portraits 1400   https://crowdheritage.eu/en/fashion-arcangeli/collection/635fb566b9d8210006391161
  - o Portraits 1500   https://crowdheritage.eu/en/fashion-arcangeli/collection/635fb6d8b9d821000639119f
  - o Portraits 1600   https://crowdheritage.eu/en/fashion-arcangeli/collection/635fb6ebb9d82100063911a0
  - o Madonne 1400   https://crowdheritage.eu/en/fashion-arcangeli/collection/635fb696b9d821000639119e
  - o Madonne 1500   https://crowdheritage.eu/en/fashion-arcangeli/collection/635fb703b9d82100063911a1
  - o Drawings 1500   https://crowdheritage.eu/en/fashion-arcangeli/collection/635fb714b9d82100063911a2
  - o Prints 1500   https://crowdheritage.eu/en/fashion-arcangeli/collection/635fb725b9d82100063911a3
  - o Prints 1600   https://crowdheritage.eu/en/fashion-arcangeli/collection/635fb731b9d82100063911a4
  - o Miscellaneous   https://crowdheritage.eu/en/fashion-arcangeli/collection/635fb74db9d82100063911a8

Poland

- Architecture
  https://crowdheritage.eu/en/architecture-jaroslaw
  The collections present architecture of several styles: Romanesque, Gothic, Secession and Modernism:
  - o Architecture   https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b3867e27b4e07b2c7709a5
  - o Works of architects with Italian roots in Poland, including:
    Aigner Piotr   https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b386bd27b4e07b2c7709d8
    Bellotto Bernardo   https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b37fe127b4e07b2c77020d
    Corazzi Antonio   https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b387ec27b4e07b2c770b4c
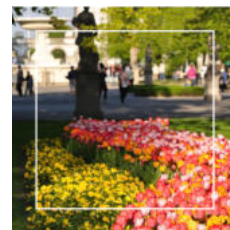
Merlini Dominik https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b3870327b4e07b2c770a1e

Lanci Franciszek https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b386e427b4e07b2c7709fd

Marconi Henryk https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b3820627b4e07b2c770435

Italian realizations https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b37b6f27b4e07b2c76ffb5

- o Romanesque architecture https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b37f7727b4e07b2c77019c
- o Gothic architecture, including:

Tenement houses https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b3874727b4e07b2c770a7b

Gothic - public buildings https://crowdheritage.eu/en/landscape-jaroslaw/collection/61b3872827b4e07b2c770a4c

Castles and fortifications https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b3800527b4e07b2c77023a

Cathedrals https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b3812b27b4e07b2c770329

Churches https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b3809f27b4e07b2c7702b8

Polychromes https://crowdheritage.eu/en/landscape-jaroslaw/collection/61b3879127b4e07b2c770acd

- o Art Nouveau in Europe https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b3855827b4e07b2c7707c8
- o Art Nouveau architecture in Poland, including:

Townhouses and villas https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b383f727b4e07b2c77063f

Public buildings https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b3836f27b4e07b2c7705e5

- o Art Nouveau details, including:

Interiors https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b384da27b4e07b2c77074a

Details https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b382f127b4e07b2c7704ff

Polychromes https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b385d827b4e07b2c7708a8

Doors https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b3846827b4e07b2c7706d5

- o Modernism https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b3862d27b4e07b2c770913
- o Stained glass https://crowdheritage.eu/en/architecture-jaroslaw/collection/61b385a727b4e07b2c77083a

- Landscape and gardens
  https://crowdheritage.eu/en/landscape-jaroslaw
  The collections feature landscapes and gardens ranging from mythical gardens such as Paradise, the gardens of Babylon to the present day:
    o Gardens from the past   https://crowdheritage.eu/en/landscape-jaroslaw/collection/61b3861327b4e07b2c7708ea
    o Mythical gardens and buildings https://crowdheritage.eu/en/landscape-jaroslaw/collection/61b37f3327b4e07b2c77016f
    o Gardens   https://crowdheritage.eu/en/landscape-jaroslaw/collection/61b2b28c27b4e07b2c76f4fe
      also including foreign gardens   https://crowdheritage.eu/en/landscape-jaroslaw/collection/61b37e8827b4e07b2c77010d
    o Trees, shrubs, flowers, including:
      gardens - flowers and plants   https://crowdheritage.eu/en/landscape-jaroslaw/collection/61b37de527b4e07b2c77009b
      gardens - trees and shrubs   https://crowdheritage.eu/en/landscape-jaroslaw/collection/61b37d5727b4e07b2c770020
    o Garden architecture, including:
      Fountains   https://crowdheritage.eu/en/landscape-jaroslaw/collection/61b3825327b4e07b2c770498
      Garden sculptures   https://crowdheritage.eu/en/landscape-jaroslaw/collection/61b37af327b4e07b2c76ff49
      Sundials   https://crowdheritage.eu/en/landscape-jaroslaw/collection/61b381a027b4e07b2c7703cf

- Ukrainian towels
  https://crowdheritage.eu/en/towels-jaroslaw
  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.
    o Ukrainian towels https://crowdheritage.eu/en/towels-jaroslaw/collection/6490031cb3cb1f0006f92a2e

- Folk costumes
  https://crowdheritage.eu/en/folk-jaroslaw
  The collection in this campaign include the folk costumes of several selected countries. Folk costumes show the cultural richness and variety of costumes in individual regions.
    o Folk Costumes   https://crowdheritage.eu/en/folk-jaroslaw/collection/646fa355c5f2250006eeb510

Spain

- Musical instruments
  https://crowdheritage.eu/en/music-montessori
  The collections feature music instruments including string instruments, wind instruments and brass instruments:
  - Musical instruments
    https://crowdheritage.eu/en/crowdschool-pilot/collection/61713e7aef3dfb02822d7707

- Gaudi
  https://crowdheritage.eu/en/gaudi-montessori
  The collections feature images of Gaudi's architecture and designs.
  - Gaudi
    https://crowdheritage.eu/en/crowdschool-pilot/collection/61769d23ef3dfb02822da262

- Food
  https://crowdheritage.eu/en/food-montessori
  The collections feature images of foods.
  - Food
    https://crowdheritage.eu/en/crowdschool-pilot/collection/61713f03ef3dfb02822d776e

- Endangered species
  https://crowdheritage.eu/en/species-montessori
  The collections feature images of endangered animals and species that are very likely to become extinct in the near future.
  - Endangered species
    https://crowdheritage.eu/en/crowdschool-pilot/collection/61713e12ef3dfb02822d76d4

3.　Thesauri

The preparation of terminology lists plays an important role in the overall process, since thesauri are of primary relevance for sharing the annotations that every student is posting in her/his own language.

A "thesaurus", i.e., a controlled lexicon of terms to be used for describing the items, allows to overcome the problem of using synonyms, so avoiding possible misunderstandings in the correct description of the digital items. A terminology per thematic area selected has been prepared in English and translated in the different partner languages, in order to retrieve a digital item also if it has been annotated in a language different from the one of the students performing the inquiry.

The use of wikidata, i.e. the collaborative and multilingual tool, created to provide support for Wikipedia, has been particularly useful in our work, since it allowed to share the terminology lists with the worldwide community supporting wikidata. In this way the thesauri created by the CrowdSchool project will be available for further translation in all the languages.

The work done for creating the lists is presented by the following table. It shows the tree structured associated to the terminology list, and the reference to the wikidata tool, from which the word can be translated into any known language. The table refers to the terminology list created for "food":

Level 1	Level 2	Level 3	Level 4	Level 5	English	WIKIDATA
alimenti					food	https://www.wikidata.org/wiki/Q2095
	alimenti animali				animal food	https://www.wikidata.org/wiki/Q107558649
		carni rosse			red meat	https://www.wikidata.org/wiki/Q3243069
			carne di bufalo		water buffalo meat	https://www.wikidata.org/wiki/Q83521
			carne di cavallo		horse meat	https://www.wikidata.org/wiki/Q1124327
			carne ovina		mutton	https://www.wikidata.org/wiki/Q14566073
			manzo		beef	https://www.wikidata.org/wiki/Q192628
		carni bianche			carni bianche	https://www.wikidata.org/wiki/Q3315904
			cappone		capon	https://www.wikidata.org/wiki/Q594676
				carne di cappone	capon meat	https://www.wikidata.org/wiki/Q107246457
			coniglio		rabbit	https://www.wikidata.org/wiki/Q9394
				carne di coniglio	rabbit meat	https://www.wikidata.org/wiki/Q3556748
			faraona		guinea-hen	https://www.wikidata.org/wiki/Q251842
			gallina		hen	https://www.wikidata.org/wiki/Q2201314
			pollame		poultry	https://www.wikidata.org/wiki/Q178559
			oca		goose	https://www.wikidata.org/wiki/Q46976697
				carne di oca	goose meat	https://www.wikidata.org/wiki/Q46976697

			pollo		chicken	https://www.wikidata.org/wiki/Q864693
				carne di pollo	chicken meat	https://www.wikidata.org/wiki/Q864693
			tacchino		turkey	https://www.wikidata.org/wiki/Q26844
				carne di tacchino	turkey meat	https://www.wikidata.org/wiki/Q4200953

4. Accessing the platform

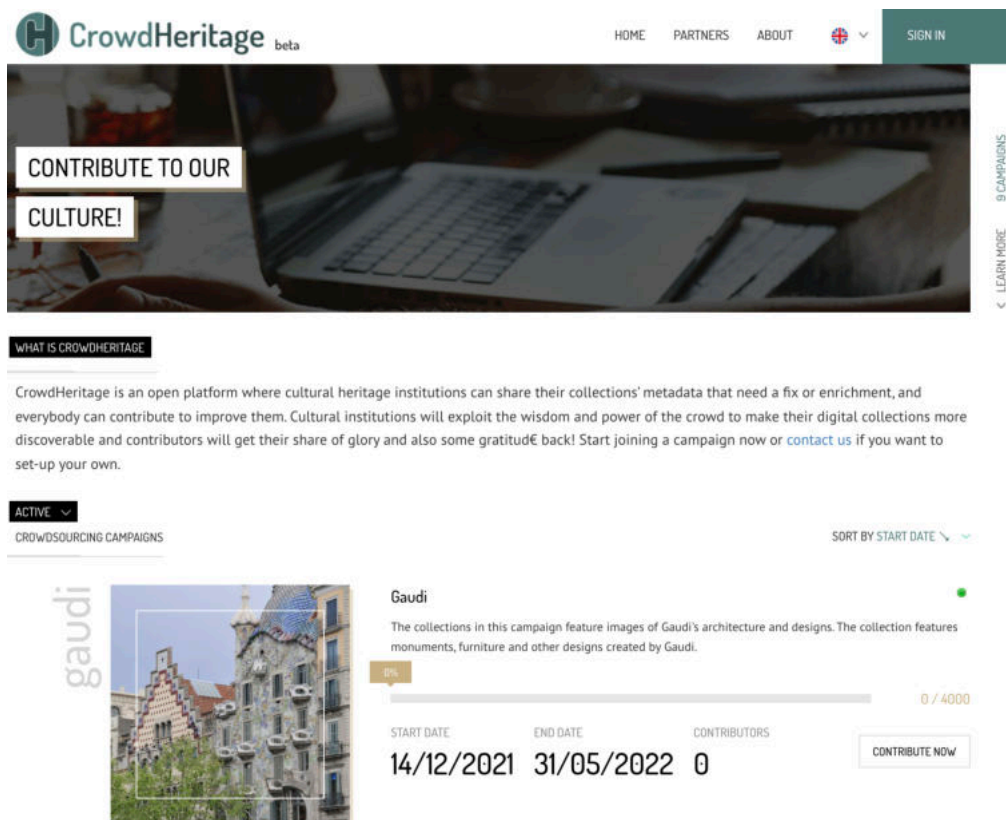On the CrowdSchool website, the users can receive information about the current campaigns:
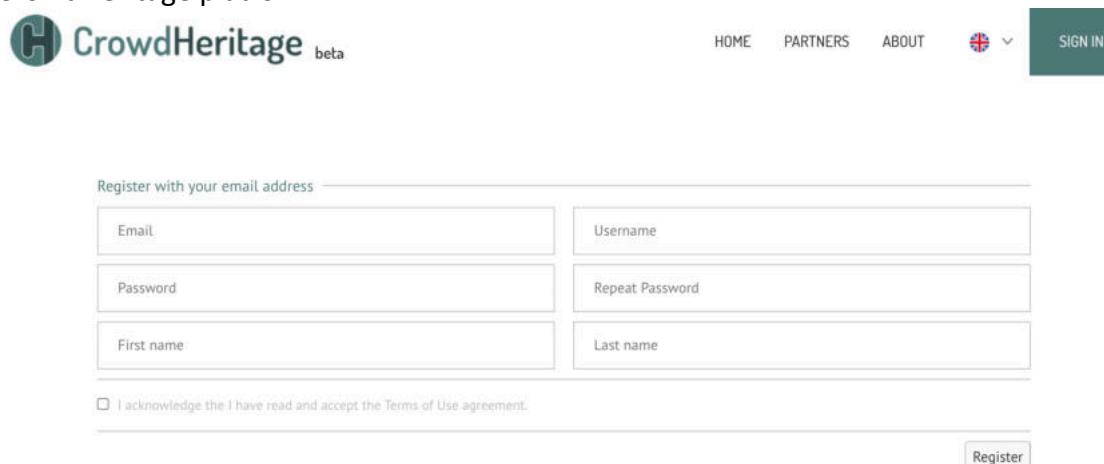

Due to the educational purposes of the project, the access to the collections in annotation mode is restricted only to the teachers and students participating in the CrowdSchool project. The annotation process sis run within the CrowdHeritage platform.

The CrowdHeritage platform is available at https://crowdheritage.eu/en. It includes 6 user interfaces in 6 different languages: English, French, Greek, Italian, Polish, and Spanish.

The registration to the CrowdHeritage platform is free (users can annotate other campaigns proposed by different cultural institutions). For this reason, the process set-up for the CrowdSchool project is the following:

- The persons involved (students, teachers, staff of the project's partners) first register to the CrowdHeritage platform:

- Then, for each campaign, a list is prepared, containing:
  o the usernames of the users who will annotate and tag the collections
  o the usernames of the users who will act as moderators and need elevated access to the campaign (to edit the campaign details, curate the collections, manage the user groups, moderate, and delete annotations).

The full set of instructions how to use the platform is available at: https://ails-lab.github.io/CrowdHeritage_Documentation/#/?id=crowdheritage-introduction