



MAS

Museum Affinity Spaces

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Collaborate. Learn. Include



Deliverable D20

Report on implementation activities

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Museum Affinity Spaces (MAS): Re-imagining Museum-School Partnerships for the 21st century through a Multiliteracies Lens

DIDAKTOR (POST DOCTORAL RESEARCHERS) - POST-DOC/0916/0248



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Executive summary

This report describes the implementation activities that took place during the first prototype cycle of the project. The focus at this phase is primary on offering and conducting online training for teachers covering the pedagogical and technical aspects of the MAS approach. This would help refine the next iterative cycles and lead towards a more successful implementation in the larger scale implementation prototype stages.

The first iterative Cycle of the Prototyping Phase for the project, took place in M8 and lasted until M12, which corresponds to June 2019, until October 2019.

During that 4-month period, the MAS team partners organised and conducted 3 implementation activities around the host countries. Of which, 1 was an activity with students (with 67 participants) and 1 was online training of museum educators and school teachers (with 28 participants) and 1 was training of school teachers (16 participants). In total 10 schools and 4 museums were involved in these activities.

The full list of activity reports is included in the document.

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1 Introduction

One of the premises of the digital age, is to nurture opportunities for culturally relevant, multimodally mediated learning for all. The issue is, how to facilitate such opportunities for inclusive technology enhanced learning practice. To succeed so, MAS project's approach is to offer to museum educators and school teachers and students with the kind of digital Infrastructure and support that is easy to access, lightweight end-user interface and framework to facilitate the use and adoption across formal and informal learning institutions. The intention is to promote sustainable engaging educational experiences.

Furthermore, educators will be supported and guided to develop, implement and share their educational learning scenarios and lesson plans and develop a wider community of practitioners that promote the best practices across Europe and beyond.

The goal of the project is to implement the aforementioned approach at a larger scale in Europe. For the first year, 3 implementation activities were undertaken, 2 physical (Nicosia, Cyprus) and 1 virtually (using the online MAS platform). Of which, 1 was an activity with students (with 67 participants) and 1 was online training of museum educators and school teachers (with 28 participants) and 1 was training of school teachers (16 participants). In total 10 schools and 4 museums were involved in these activities. The intention is to proceed with implementation activities during year 2 of the project, In M12-24. These will be reported in a separate report.

The document here first describes the main elements of the implementation plan that give the methodological and practical guidelines of actions to be followed in order to realise this goal in the course of the project. Then it focuses on the implementation activities reported for the first iterative cycle of Prototyping Phase 2, which covers took place in M8 and lasted until M12, which corresponds to June 2019, until October 2019. It concludes with the summary of results.

Implementation activities (Prototyping Phase 2)



Figure 1. Implementation activities for M1-M12

2 Objectives

The intention through WP4 and WP7, is to implement the MAS pedagogical approach following the principles of design-based research during the Prototyping Phase of the project. This includes the related pedagogical learning scenarios developed and incorporated to the MAS Archive. The implementation activities will unfold in two iterative cycles and a final implementation and evaluation phase, from M8-M24. The intention is to promote the implementation activities across the 9 nine countries participating in the preliminary context analysis and expand this to a larger scale in the proceeding stages. For the first iterative cycle of the MAS project, to be reported here, the physical implementation activities were conducted in Nicosia, Cyprus, and engaged participants from 4 countries (namely Cyprus, Greece, Portugal, Italy). During the virtual training, participants from 9 countries took part.

All activities require a well-planned and coordinated collaborative effort with clear guidelines detailed in an implementation plan. The Implementation Plan presented here has the following set of objectives, which are organised in four interconnected major elements:

Implementation activities

To describe and propose a methodology for the involvement of the pilot schools and museums in the MAS project. This includes general guidelines and practical examples of implementation activities to illustrate the process of recruiting, building, supporting and sustaining a community of museum and school educators.

Key mentors per country

To define the role and the duties of the mentors, with reference to how the collaborative effort will be coordinated to facilitate the implementation activity.

Number of museums and schools per country per implementation phase

To distribute the number of the pilot sites in a balanced way across the 9 participating countries for the first Iterative Cycle of the Prototyping Phase.

Reporting of activities

To describe the reporting procedure to follow in order to document and monitor the implementation progress throughout the life-cycle.

The above guidelines will remain more or less unchanged for the lifetime of the project. Some additional and complementary items (e.g. contingency plan) might be added, if necessary, reflecting the experience gained as the project advances.

3 Implementation activities

The implementation of the MAS project takes place in 2 phases, from the preliminary needs analysis to the two iterative cycles of the prototyping phase and the final implementation and evaluation phase.

- ✚ Phase 2 lasts from M8-18 and begins with the first iterative cycle. It involves 111 participants from 9 countries and is completed in M12. The second iterative cycle will involve 140 participants from 12 countries and will last until M18.
- ✚ Phase 3 will initiate in M18-M24 and anticipates around 250 participants from 16 countries.

Before and during each phase, it is essential to consider how to enhance opportunities for museum-school synergies, implementation of the MAS approach and community building/support activities to attract and engage museum staff and school teachers and students. (The community building actions are the focus of WP6, details of which are available at MAS Deliverable 26 "Specifications of Participatory Activities").

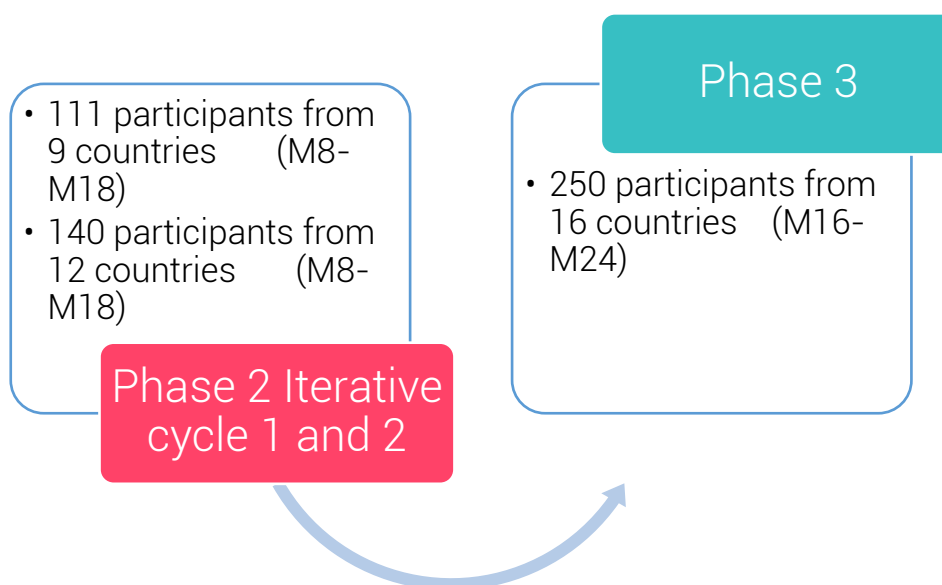


Figure 2. Time plan of implementation in MAS - pilots

In general, in the scope of MAS, an implementation activity intends to bring into the classroom and museum practice, the use of virtual museum environments and related resources in an innovative, user friendly and engaging way. In this way, museum educators, school teachers and students have a stimulating experience in multimodally mediated, museum related experiences. As part of the support mechanism in MAS, a series of events, including presentation seminars and training workshops, will take place for stakeholders, in order to familiarise with the associated methodology, gain confidence and be able to adopt and adapt the use of virtual museums, online learning resources and other tools for everyday practice.

All in-school activities with students and preparation/support actions like training for museum educators and school teachers, which from now on will be referred to as implementation activities, events or actions, are implemented by the MAS team in collaboration with local mentors, responsible for the local management of the project resources and activities. More details about the role of the MAS mentors are provided in section 4 of this report.

One of the most important aspects for successful implementation of the MAS approach, relates to reaching out the potential target group to be engaged in implementing MAS activities in their schools and museums. This challenge is addressed broadly with the methods presented below.

Methods of approach

Top down

- Official channels of communication to reach and invite target groups, eg. school district counsellors, cultural authorities, etc.
- Introductory-informational event (example agenda in Appendix).
- Guidance and support with learning scenarios, additional events (see example agenda for a short or a day workshop in Appendix).

Bottom up

- Informational events and visionary workshops specified in D26.
- Open invitation and direct invitation to school teachers and museum educators of acquaintance.
- Contact with relevant associations and national professional unions to arrange seminars or workshops.
- Contact faculty members in relevant departments of higher education institutions to bring them in contact with target group they already work with.

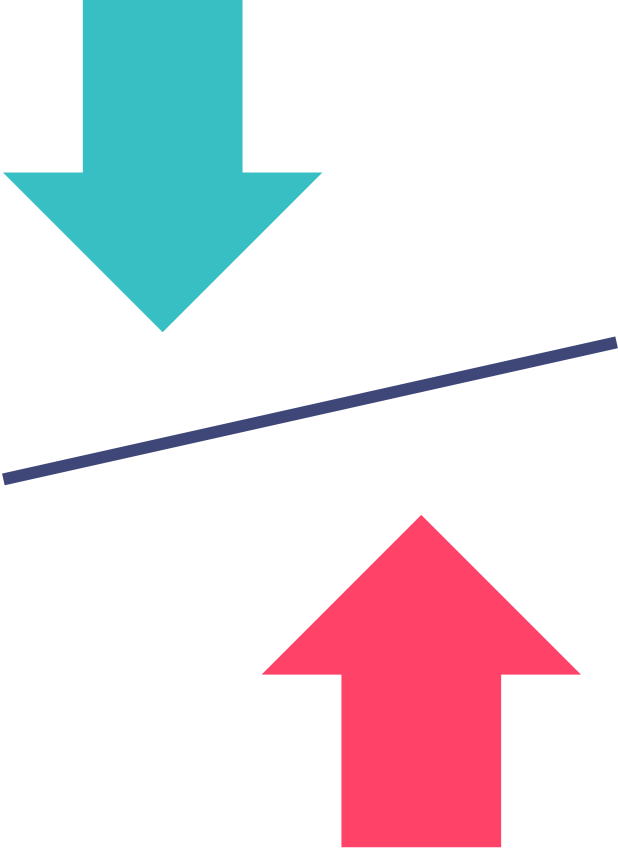


Figure 3. Methods of approach for implementation in MAS - pilots

In addition to these, it is envisaged that certain multimodal challenges can take place, in the form of contests for educators and students. The contest may run at regional, national or even international level, in order to promote the use of virtual museums in the classroom, with an example of a contest being the development of educational scenarios or activities using the MAS Cabinet virtual museum environment. In addition, another example can concern the development of museum-school partnerships through the MAS Portal tool. The prize for these contests could be to be publicly acknowledged with press releases and announced in social media of the project, as well as participating to some conference or dissemination event as exemplar practice.

These methods have proven effective in other similar projects, however may require adjustment in the context of the MAS research. There is provision for country specific implementation plans where needed, in collaboration with MAS mentors.

What is crucial in the implementation effort is to facilitate the process through effective community building and support of the implementation communities in each country where possible, through the MAS Hub and work in WP6. The figure below illustrates the mechanism of recruiting and engaging museum educators and school teachers in MAS and the interconnection between WP4, WP6 and WP7 and the three phases of the design-based research adopted in MAS.

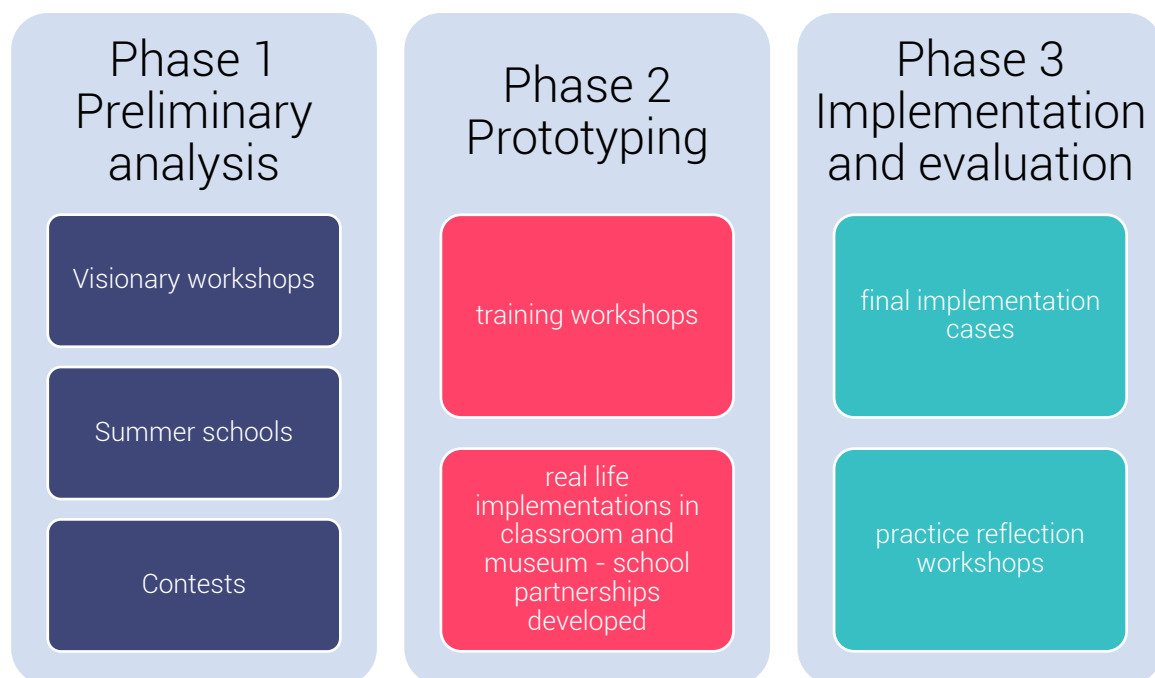


Figure 4. Recruitment and engagement mechanism to sustain a community of practitioners in MAS

The success of the implementation, is largely depended to the work carried out during the Prototyping Phase with the two iterative cycles of implementation (pilots). It is essential that all aspects of the design methodology are addressed, the different tasks are delivered timely and the MAS team has at hand an overall educational approach, and a functional Infrastructure to work with during implementation. The qualities that this Infrastructure should have are:

- it satisfies users' real educational and pedagogical needs,
- it is attractive,
- it is user friendly,
- it is easily available and properly supported.

4 The role of mentors

Mentors in MAS have a critical role to play. Their work is coordinated by WP6, regarding the community building, and in most cases, they are recruited during the first Phase of the project, the Preliminary context analysis. Among their responsibilities could be the local management and localisation of the project resources and activities regarding the selection and evaluation of the pilot sites, the implementation activities and supporting actions. In this context, the MAS Mentors role is considered as one of the key factors of success for the successful implementation of the MAS Pedagogical approach, in that they can inform their peers on the Framework and even give seminars/workshops, to introduce the MAS platform and functionalities. Listening to the experience of their colleagues, has been found as more convincing for practitioners like teachers and museum professionals, since most of the actual work is done in practice.

Before MAS mentors can take up relevant duties, it is crucial that they are informed themselves on the MAS approach and gain all necessary guidance before transferring their knowledge. This can take place through a series of support activities (such as presentation seminars and training workshops), in order for the potential mentors to get familiarised with the relevant technology and to enable the adaptation of the use of the MAS Infrastructure in their everyday school and museum educational practice.

Once they have established the desired level of experience in the MAS approach, mentors are assigned their role and in the framework of the workshops, can inform the users about the project's approach, as their participation to the project will be systematically monitored and assessed. Follow-up workshops, so-called practice reflection workshops, can also be organised by the mentors for each of the participating countries, according to a common generic procedure developed within the WP6, which however will allow for flexibility to adapt to a variety of local circumstances.

All implementation and evaluation activities will be centrally designed and coordinated, but implemented with the help of local mentors in the countries where MAS team members cannot attend.

5 Reporting of implementation activities (IA)

A critical part of the implementation plan in MAS, is the reporting actions and procedures that should be followed across countries. The reports should be concise and accurate, as they are used to monitor the project's implementation development, inform the next iterative cycle and employed for refinement of tools and services, as well as reporting in the public deliverables of the project.

A short report will be produced on each IA by the team member present at the event, if necessary with assistance from other facilitators, to overcome possible language barriers. Reporting should be produced within two weeks from the date of the IA. Any material in printed or electronic format that is related to the implementation activity, should also be attached to the report as well (e.g. dissemination material handed to participants, educational material produced specifically for the activity, photos or videos taken during the event, etc). The tables that follow show two forms/templates proposed and agreed for reporting Training Activities/Events with museum educators/teachers and Implementation Activities with students respectively.

The goals and scope of the reporting procedure will stand over the lifetime of the project, but specific improvements and revisions or complementary actions might be added over time if needed.

Table 3. Proposed template of Training Activity Report

MAS	<i>[LL-DDMMYY] Please follow this format:</i>
Event Code	<i>LL= 2 letter country code, DDMMYY = date</i>
Title	
Country City/Region	
Working language	
Start/End Date	<i>Please use this format DD/MM/YYYY</i>
Organising Institute	
Coordinator name and email	
Activity Form	<i>[Workshop, Seminar, Conference, Summer School, in-school activity, etc]</i>

Activity Type	<p><i>[Local, National, International]</i></p> <p><i>Local activities: Demonstration & training in schools/museums or in teachers' training centers, workshops/seminars at regional level, etc.</i></p> <p><i>National activities: National Conferences and Workshops, or Contests for students and teachers, etc.</i></p>
Total number of teachers/schools museum educators/museums	<p><i>Provide the number, or an estimate, of participants.</i></p>
Implemented Learning scenarios and MAS Cabinet topic of interest	
Brief description	<p><i>Write one or two paragraphs describing in brief the activity (subject, objectives, target audience etc)</i></p>
Learning outcomes	<p><i>Give a short description of what participants are expected to have learned</i></p>
Website	<p><i>(if applicable) The URL of the website that has been set up for this activity.</i></p>
Photos or other relevant material	<p><i>Select 3-4 good-quality photos or other relevant material (flyer, brochure, poster) and attach them in this report</i></p>
Event agenda	<p><i>(if applicable) Please copy here the agenda of the event (program of activities, etc.).</i></p>

Table 4. Proposed template of Implementation Activity Report

MAS Report Code	<i>[LL-DDMMYY] Please follow this format: LL= 2 letter country code, DDMMYY = date</i>
Title	
Country City/Region	
Working language	
Start/End Date	<i>Please use this format DD/MM/YYYY</i>
Any national authorities Involved	
Coordinator name and email	
School/Museum Profile	
Number and age of students	<i>Provide the number, or an estimate, of participant students. Please also indicate their age group</i>
Activity Description	<i>Write one or two paragraphs describing in brief the activity (mention subject e.g. history, language arts, etc, objectives, target audience etc)</i>
Implemented Learning scenarios and MAS Cabinet topic of interest	

Learning outcomes	<i>Give a short description of what participants are expected to have learned in connection with the concepts of knowledge processes</i>
Photos or other relevant material	<i>Select 3-4 good-quality photos or other relevant material (brochure, poster) and attach them in this report</i>

6 Reports for implementation phase

6.1 Iterative Cycle 1

The MAS team conducted and coordinated 3 implementation activities in Cyprus listed in the following table. Two training activities for museum educators and school teachers were organised, with 44 participants. In one occasion there was also a workshop for primary-school students with 67 participants using the MAS Cabinet and related pedagogical learning scenarios. The subject domains of these activities focused on language arts, technology and history.

Date(s)	Type	Participants	MAS Cabinet use	Subject(s)
16/04/2019	Training of school teachers	16	YES	Language arts, Technology
20/05/2019	Activity with students (repeated over one day)	67	YES	History, Physical Education
01/06/2019	Training of museum educators and school teachers	28	YES	Technology, History

In the following sections, the detailed reports from the activities are shown.

MAS Event Code	CY-160419
Context: standalone event or combined with other ws, online or face to face	Face to face
Country City/Region	Nicosia / Cyprus
Working language	Greek and English
Start/End Date	16/04/2019 1 hours
Organising Institute	HUB NICOSIA
Coordinator name and email	Stefania Savva Stefania.savva@cut.ac.cy
Total number of teachers/schools museum educators/museums	16 teachers from 9 primary schools
Brief description	<p>The MAS portal and the Website were presented and teachers were encouraged to access it and spread the word to their colleagues.</p> <p>Teachers were asked to use the Reception room of MAS alongside the basic learning scenarios and provide their feedback on the overall experience. Participants were particularly asked to use the mystery box and postcard problems concepts included in the designed scenarios.</p>

<p>Facilitators Observations</p>	<p>Teachers seemed engaged in the activities and the facilitators perceived that they enjoyed working with MAS Cabinet.</p> <p>They were impressed that they could discuss with their students by using objects located very far from the actual user that is literally half way around the world from the actual user. They also saw a real benefit of the multimodal effects of the virtual museum.</p>
<p>Common themes identified in the case studies</p>	
<p>Examples illustrating common themes</p>	
<p>Recommendations made by</p>	<ul style="list-style-type: none"> - Two teachers were particularly interested if there is designed space that relates to Geography and Maths. - It would be useful to be able to export the notes taken by presenter using scratchpad that was embedded in the conclusion phase - A better integration of scenarios into local curricula would be helpful for teachers.

<p>Website</p>	<p>No website</p>
<p>Photos or other relevant material</p>	<p>No pictures available</p>
<p>Event agenda</p>	<ul style="list-style-type: none"> - Intro to MAS Portal - Presentation of the MAS Project Website - Individual usage of the MAS Cabinet app - Reflection of the used app - Discussion

MAS Report Code	CY-200519
Title	Future learning methods for future jobs
Country City/Region	Limassol / Cyprus
Working language	Greek, Russian and English
Start/End Date	Date: 20/05/2019; 80 minutes
Any national authorities Involved	2 Primary schools from Limassol
Coordinator name and email	Stefania Savva Stefania.savva@cut.ac.cy
School Profile	Primary schools with diverse student population and plenty of sports initiatives
Number and age of students	67 students from 2 primary schools, ≈10-11 years old
Activity Description	<p>The main goal was to introduce virtual museums embedded into the school Learning classroom.</p> <p>First they received a brief description of virtual museums: what virtual museums are, how you can connect to real hardware over Internet, how you can access Objects and collections geographically detached from the user. This theoretical demonstration has been underpinned with a live demo of MAS Cabinet.</p> <p>The objective was to gain an impression of students regarding the use of our app. Students were asked for their feedback, particularly their preferences on how the presented application could be improved.</p>

Implemented Learning scenarios and MAS Cabinet topic of interest Sports room / Olympics / Grade 5 History unit

Students are interested in working with virtual museums or other learning tools involving ICT. Some are interested in technical details like software programming Most other students would like to use this kind of learning as an opportunity to learn and have fun more and to use virtual museums as an additional tool.

Learning outcomes

The overall impression was very positive. Students seemed engaged in the Even more than they usually do according to their teachers.

And even should be embedded in the classroom as additional activities. Some students had difficulty navigating, however they would accept the usage of virtual museums as an optional activity.

Another observation was that students would prefer to have an introduction and guidance by their teachers when they use virtual museums for the first time.

Photos or other relevant material



MAS Report Code	ON-010619
Title	Implementation Activity
Country City/Region	Virtual / MAS Platform
Working language	English
Start/End Date	Date: 07/07/2014; Time: 10:00 – 11:00
Any national authorities Involved	NO
Coordinator name and email	Stefania Savva Stefania.savva@cut.ac.cy
School/Museum Profile	Various museum educators and school teachers from 9 countries
Number and age of students	28 museum educators and school teachers
Activity Description	<p>The main goal was to introduce virtual museum environments embedded into The MAS approach.</p> <p>First they received a brief description of virtual museums: what they are, how you can connect to real hardware over Internet, how you can access Objects and collections geographically detached from the user. This theoretical demonstration has been underpinned with a live demo of MAS Cabinet.</p> <p>The objective was to gain an impression of students regarding the use of our platform. Educators were asked for their feedback, particularly their preferences on how the presented platform could be improved.</p> <p>are, how you can connect to real hardware over Internet, how you can access</p>

<p>Implemented Learning scenarios and MAS Cabinet topic of interest</p>	<p>Environment room / Climate change</p>
<p>Learning outcomes</p>	<p>Participants of this online workshop were interested in working with virtual museums and the MAS infrastructure. Some of the participants promised to inform their peers about upcoming conferences related to eLearning. These conferences might provide important opportunities for additional steps in the community building.</p> <p>Teachers used the Environment room during the webinar. Some of them had technical difficulties accessing the museum app due to slow internet connection. However, most of them had downloaded the app as asked beforehand and had performed the activities.</p> <p>The facilitators' overall impression was very positive. Teachers were engaged in the activities and enjoyed the experience with the MAS Cabinet and platform.</p>

Appendix: Examples of event agendas

Summer School Course

Day 1:

- Introduction and overview of the course
- Participants' presentation
- Keynote Talks
- *Lecture, 2 hours*

Day 2:

- Introduction to learning technologies, eLearning tools, virtual museum environments and MAS Cabinet in particular. Presentation of example technology–enhanced educational activities. – How educators can benefit.
- *Lecture, 3 hours*
- Presentation of educational repositories of museum–school profiles and MAS Hub.
- *Workshop, 2 Hours*

Day 3:

- Introduction to the use of educational resources as well as virtual museum environments for heritage education and curriculum integration across different subjects.
- *Workshop, 2 Hours*
- Learning design practice: Using the virtual museum environment (MAS Cabinet) and design of Pedagogical learning scenarios-Part1
- *Workshop, 2 Hours*

Day 4:

- Learning design practice: Using the virtual museum environment (MAS Cabinet) and design of Pedagogical learning scenarios-Part2
- Practice reflection: Discussion on the organisation of the virtual museum environment, connection to different curricula.
- *Workshop/Discussion, 3 hours*
- Presentation of the added value of educational metadata and the importance of adding educational objectives. Characterisation of learning scenarios using educational Metadata.
- *Workshop, 2 hours*

Day 5:

- Refining and finalising the Pedagogical scenarios based on comments by the trainers.
- *Workshop, 2 hours*
- Participatory Engagement Activity: Reading and commenting on fellow participants' Pedagogical scenarios and exchange of opinions among participants.
- Discussion on the added value of teachers' online communities.
- *Workshop, 2 hours*

Day 6:

- Presentations of the Pedagogical scenarios produced by the participants.
- *Lecture / Demonstration, 3 hours*
- Conclusions – Evaluation of the training course – Guidelines for follow-up activities
- *Lecture, 2 hours*

Agendas of short introductory and training events

Such events may be co-organised by partners with the local school counsellor/advisory for a group of teachers from schools in the area, while also the relevant cultural authorities or museum stakeholders can be reached in the case of cultural institutions, depending if they are private or public. These events could also be incorporated within the framework of a conference or annual meeting of school teachers, museum practitioners or similar event at national or regional level.

Example agenda of a 2h30m introductory event on MAS.

Time	Session description
9:00 - 9:45	Introduction and welcome (5 min) Presentation of an educational scenario (e.g. on maths, physics or history) by a school teacher using the MAS Cabinet (virtual museum environment app)
9:45 - 10:00	Discussion
10:00 - 10:15	Break
10:15 - 11:00	What MAS offers (presentation of the pedagogical framework, objectives and the museum-school profiles and virtual museum environment application)
11:00 - 11:15	Discussion
11:15 - 11:30	Feedback collection, recruitment of interested educators

Example agenda of a 2h30m training event/workshop on MAS platform.

Time	Session description
9:00 - 9:45	Introduction and welcome (5 min) Presentation of an educational scenario (e.g. on maths, physics or history) by and educator using the MAS platform
9:45 - 10:00	Discussion
10:00 - 10:15	Break
10:15 - 11:00	Hands-on training on the MAS platform
11:00 - 11:15	Discussion on user's requirements, difficulties, proposed improvements
11:15 - 11:30	Feedback collection

Agenda of a training workshop

Example agenda of a day long training workshop on MAS platform and related educational scenarios.

Time	Session description
9:00 - 9:15	Introduction and welcome (5 min)
9:15 - 10:15	Presentation of an educational scenario (e.g. on maths, physics or history) by and educator using the MAS platform
10:15 - 10:45	Discussion
10:45 - 11:00	Break
11:00 - 12:00	Presentation of an educational scenario (e.g. on maths, physics or history) by and educator using the MAS platform
12:00 - 12:30	Discussion
12:30 - 13:30	Lunch break
13:30 - 15:00	Hands-on training on the MAS platform
15:00 - 15:15	Break
15:15 - 16:15	Hands-on training on developing an educational scenario using the MAS platform
16:15 - 16:30	Discussion on user's requirements, difficulties, proposed improvements
16:30 - 16:45	Feedback collection

■ Session 1 ■ Session 2