Intellectual Output 2

A4: Validation exercises

Deliverable: A4

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Empowering innovation in STE(A)M
through IP awareness
2020-1-UK01-KA201-078934

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REVISION HISTORY

Version	Date	Author	Description	Action	Pages
1.0	18/02/2022	INOVA+	Creation	C	TBS

(*) Action: C = Creation, I = Insert, U = Update, R = Replace, D = Delete

REFERENCED DOCUMENTS

ID	Reference		Title
1	2020-1-UK01-KA201-078934		IPinSTEAM Proposal
2			

APPLICABLE DOCUMENTS

ID	Reference		Title
1			
2			

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Contents

Empowering innovation in STE(A)M
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1.   IPinSTEAM project

1.1 The context

On the point of creativity and innovation being the roots of European cultural and socio-economic growth, respecting others' work becomes a far-reaching need both for professional and personal development of individuals (EUIPO, 2017). On the other hand, nowadays that online sharing of information is rife, one cannot help but wonder whether people are aware of proper ways to attribute others' ideas along with the necessity to reap the benefits of intellectual potential given the fact that most innovations are now highly related to technology.

Au contraire, the absence of Intellectual Property (IP) protection of educational materials and innovations – with online learning only deteriorating the situation – reveals a significant problem in many European countries. In fact, while uncontrolled access is given to educational resources across the Web, the majority of learners are not aware if IP is implemented in their work as well as ways to protect their own intellectual property (Evans, 2016).

On the grounds that STEAM comprises continuous innovation, invention, discovery and understanding of technical knowledge that lead to (commercial) products, the protection of inventions becomes more and more complex (National Inventor Hall of Fame, 2019). Conceivably, this reveals the rationale behind the lack of IP in school education. In particular, recent research has depicted the knowledge and implementation gaps related to IP, resulting in lack of knowledge about working definitions of IP in the field of Arts. In conjunction with the fact that most European countries are not in position to capture the relevance of IP in STEM, the need to integrate IP in STEAM curricula becomes even more significant (Office for Harmonization in the Internal Market, 2015).

1.2 Objectives

In order to address the lack of IP knowledge resulting in an inefficient implementation of IP in the world of inventions, the ***IPinSTEAM project*** aims at promoting IP strategies in schools and more specifically in STEAM education under the prism of confronting this issue from its roots. To generate awareness about Intellectual Property across European educational institutions, the project will develop an innovative ICT-enabled training package focused on the needs of K-12 STEAM teachers.

Towards that purpose, the project will develop and validate training materials tailored to the real needs of school teachers, educational institutions and STEAM departments towards giving shape to the integration of IP concepts into STEAM curricula.

1.3 Target groups

The ***direct target group*** of the project involves STEAM teachers, mainly primary school and lower secondary school teachers (ages up to 12). They will learn the key concepts of Intellectual Property along with useful information and guidelines about ways to efficiently implement IP strategies in STEAM-related subjects and integrate them into their curricula. By all means, all school STEAM departments can be regarded as direct target group of the project.

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The *indirect target audience* of the project comprises:

- Students up to 12 years old
- Schools and educational institutions teaching STEAM-related subjects
- Law schools and departments
- Policy makers responsible for the design and implementation of actions relevant to ICT strategies for educational purposes
- Other institutions or organizations that are active in school education
- Authorities or organizations that can organize specific actions in order to contribute to the development of high-quality education
- Networks, voluntary associations and other NGOs that are active in school education
- Research communities active in the broader field of lifelong learning.

2.   National report

2.1   Objectives

The objective of the present report is to present the results of the validation activities performed with representatives of the target group at national level. Each partner will have to engage at least 20 teachers and 5 students to validate the project outcomes, collecting the results of the validation questionnaires for teachers and for students. The aim is to receive valuable feedback towards continuous improvement.

Empowering innovation in STE(A)M
through IP awareness
2020-1-UK01-KA201-078934

Co-funded by the
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of the European Union

2.2 Questionnaire for teachers

Please score the following statements considering the scale:

1 = Completely Disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Completely agree.

	1.	2.	3.	4.	5.
The topics and contents addressed by the Gamified Mediator were relevant					
The scenarios proposed in the Gamified Mediator were adequate to the acquisition of knowledge on Intellectual Property (IP)					
The scenarios proposed in the Gamified Mediator were relevant/significant for teaching IP concepts on STEAM subjects					
The tips/feedback provided were adequate and relevant					
The proposed scenarios were original					
The proposed scenarios were adapted to the target-group					
The overall visual design of the Gamified Mediator was adequate					
The text was legible					
The animations used in the Gamified Mediator were adequate					
The proposed scenarios promoted students' engagement					
The proposed scenarios allowed the acquisition of knowledge in a fun and enjoyable way					

Empowering innovation in STE(A)M
through IP awareness
2020-1-UK01-KA201-078934

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Erasmus+ Programme
of the European Union

My general evaluation of the Gamified Mediator is positive					

Please, feel free to add anything you find relevant regarding the Gamified Mediator.

2.3 Questionnaire for students

Please score the following statements considering the scale:

1 = Completely Disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Completely agree.

	1.	2.	3.	4.	5.
The topics and contents addressed by the Gamified Mediator were relevant					
The Gamified Mediator helped me to understand better the importance of Intellectual Property in STEAM subjects					
The Gamified Mediator gave me important knowledge and resources to apply Intellectual Property in STEAM subjects					
The proposed scenarios were original					
I enjoyed the Gamified Mediator					
The overall visual design of the Gamified Mediator was adequate					
The text was legible					

Empowering innovation in STE(A)M
through IP awareness
2020-1-UK01-KA201-078934

The animations used in the Gamified Mediator were adequate				
The tips/feedback were useful for clarifications				
The proposed scenarios allowed me the acquisition of knowledge in a fun and enjoyable way				
I would recommend this Gamified Mediator to others				
My general evaluation of the Gamified Mediator is positive				

Please, feel free to add anything you find relevant regarding the Gamified Mediator.
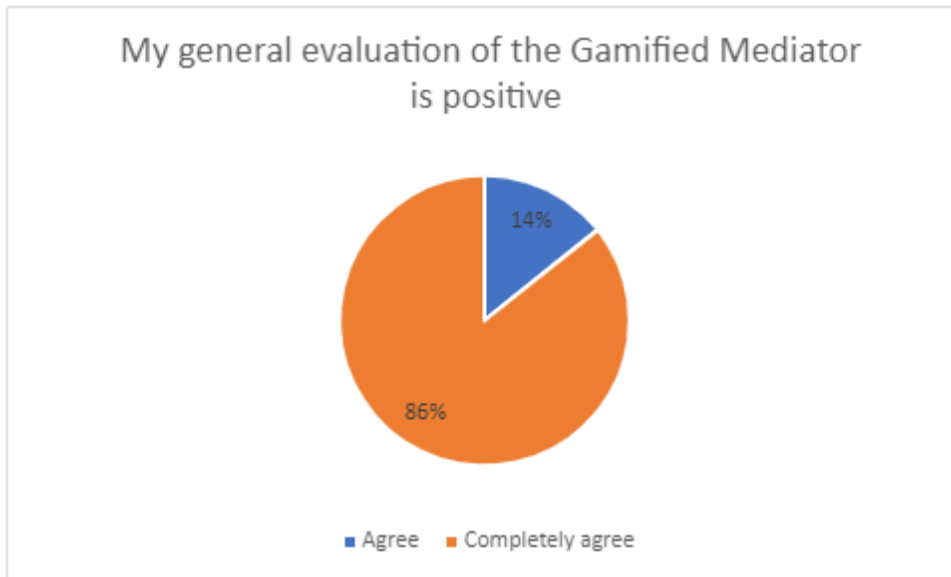
3.   Conclusions

Since the aim of the testing was to build awareness of adult educators regarding the documents developed within IO2-IPinSTEAM Dynamic Demonstrator, the target group approached were 21 teachers and 5 students.

Valencia Innohub recruited them by different methods. Firstly, we have been promoting through our social networks (Facebook, Twitter). Secondly, we also used the information posted on the website of the project (https://ipinsteam.eu/). And thirdly, from Innohub we are in contact with some schools in the city of Valencia that were willing to contribute in the piloting phase.
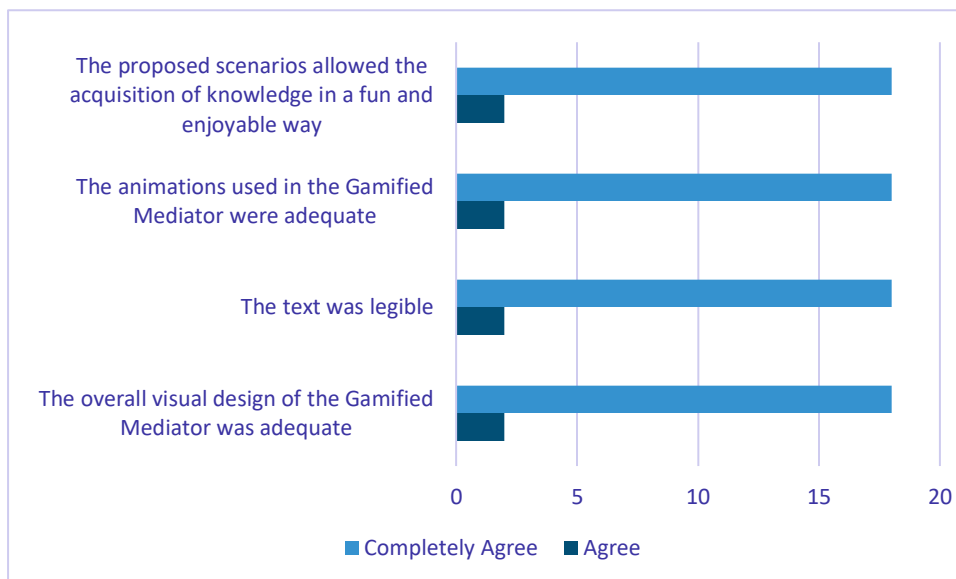
In order to ensure proper and relevant feedback of the participants, the Partnership created a survey with one big question. Valencia Innohub distributed the one in Spanish among the participants.

The question was consisted of 13 statements relating to different aspects of the Dynamic Demonstrator provided the following evaluation.

SECTION: Teachers

Empowering innovation in STE(A)M
through IP awareness
2020-1-UK01-KA201-078934

My general evaluation of the Gamified Mediator is positive

14%

86%

■ Agree ■ Completely agree

As a general review, we could conclude on the positive impression spawn by the Dynamic Demonstrator. 86% of the participants consider that the proposed scenarios promoted students' engagement and the tips/feedback provided were adequate and relevant. On the same way, 81% believe that the topics and contents addressed by the Gamified Mediator were relevant.

The proposed scenarios allowed the acquisition of knowledge in a fun and enjoyable way

The animations used in the Gamified Mediator were adequate

The text was legible

The overall visual design of the Gamified Mediator was adequate

0   5   10   15   20

■ Completely Agree ■ Agree

But the extremely positive results are shown in the lasts statements, which asked "The overall visual design of the Gamified Mediator was adequate", "The text was legible", "The animations used in the Gamified Mediator were adequate" and "The proposed scenarios allowed the acquisition of knowledge in a fun and enjoyable way". Here 19/21 completely agree with these statements, as you can check on the above graph.

Empowering innovation in STE(A)M
through IP awareness
2020-1-UK01-KA201-078934

The last question in the survey allows participants to add their opinion through open-answer responses. Participants answered the following:

- Its practical, visual and entertaining
- Very entertaining and the content is very interesting
- The questions are appropriate and help you retain the knowledge
- The content is very relevant
- "As a teacher, I think that the use of these games will be really useful to know if the students have understood the content of the modules or not"
- Fun to use in the classroom
- The questions are very easy to apply in the classroom
- Practical and interactive
- A very fun way to apply IP concepts in the classroom
- Some questions of the Environmental engineering are long and can confuse students
- Some scenarios don't provide a question or cannot be answered with yes on no

SECTION: Students

Moving on to the students, they were examined the same Gamified Mediator as the teachers. Here is their feedback.
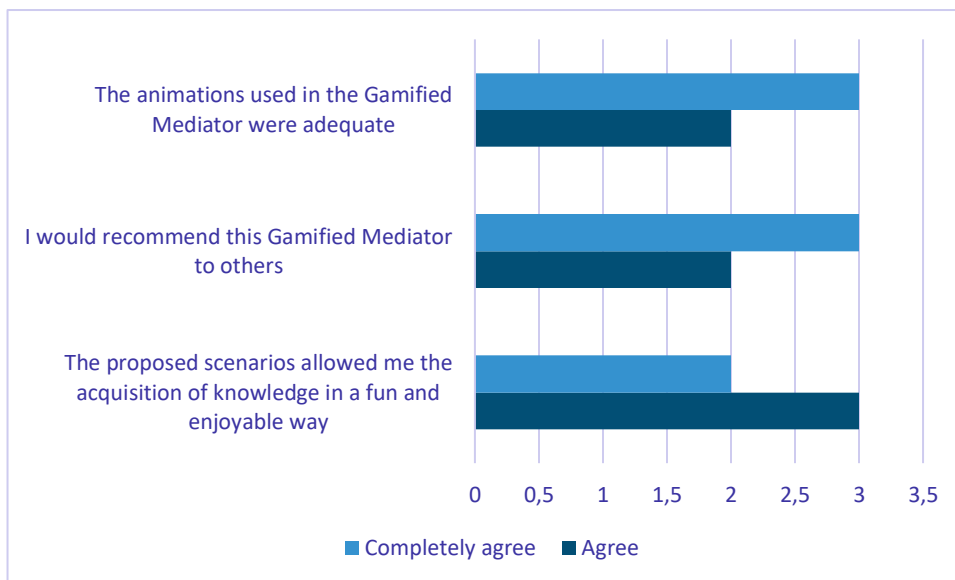
60% of the participants agree and 40% completely agree that the acquisition of knowledge succeeded in a fun and enjoyable way. Regarding the animations of the Gamified Mediator collected very positive responses. Same way, the users would recommend it to others, with 40% agree and 60% strongly agree.

Empowering innovation in STE(A)M
through IP awareness
2020-1-UK01-KA201-078934
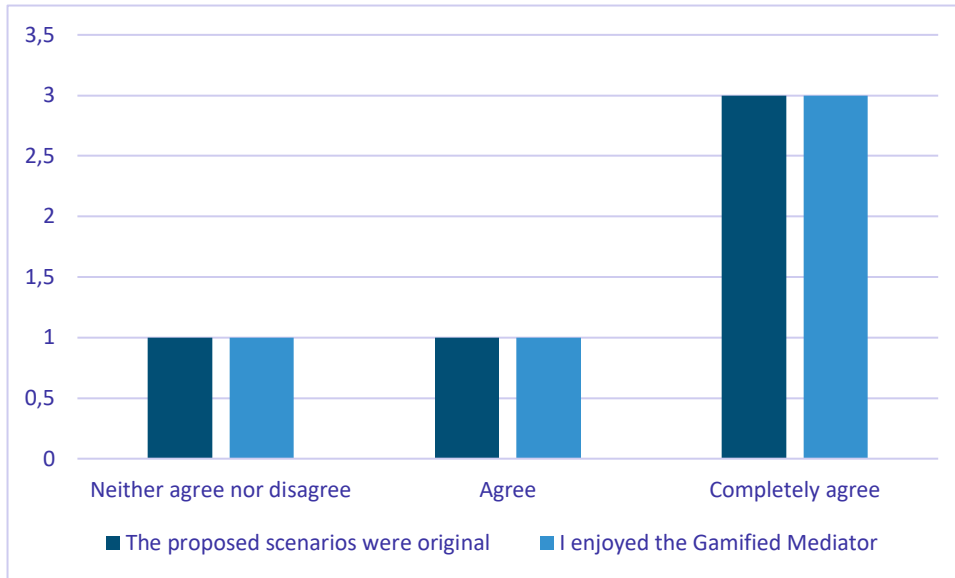
On the statement "I enjoyed the Gamified Mediator" and "The proposed scenarios were original" the majority of participants (4 out of 5) agree or completely agree that it was enjoyable and scenarios were originals. Only one was the number of persons who voted for the neutral option in both statements.

On the open question the responses were:

- It would be good to put an introduction about what is expected from the user and how to answer, as some texts do not include a question
- I think it is a very dynamic way to learn and test yourself so that you can later review those topics about which you have less idea
- I enjoyed it very much
- My evaluation is positive

4.   References

Please use APA Style to write down your references.