Intellectual Output 1

A6: Validation exercises

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CIVIC
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1.0	18/02/2022	INOVA+	Creation	C	TBS
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(*) 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			

Contents

1. IPinSTEAM project 4
1.1 The context 4
1.2 Objectives 4
1.3 Target groups 4
2. National report 5
2.1 Objectives 5
2.2 Questionnaire for teachers 5
2.3 Questionnaire for students 8
3. Conclusions 12
4. References 18

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.

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

2.2 Questionnaire for teachers

	3d Printing	Environmental Engineering	Mathematics	Physics	Robotics	Social Studies
Which subject did you test?						

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.*
	General assessment				
The course structure was adequate.					

The topics and contents of the course addressed were relevant					
The contents of the course were consistent with the proposed learning objectives					
The activities and exercises proposed during the lesson plans were adequate to the acquisition of knowledge on Intellectual Property (IP)					
The contents of the lesson plans were relevant/significant for the teaching of IP concepts on STEAM subjects					
The course workload was adequate					
The proposed activities were original					
The proposed activities were adapted to the target-group					
The students were engaged in the course.					
The technologies, materials and resources used were effective.					
My general evaluation of the course is positive.					
Modules assessment					
About Module 1 Design: The objectives of the module and the lesson plan were clear					
About Module 1 Design: The content was organized and well planned					
About Module 1 Design: The contents of the lesson plan were easily applied in the classroom					

About Module 1 Design: The suggested materials to be presented were clear and appropriate					
About Module 1 Design: The duration of the activities was adequate according to the objectives					
About Module 1 Design: The key questions for knowledge testing were adequate					
About Module 2 Trademarks: The objectives of the module and the lesson plan were clear					
About Module 2 Trademarks: the content was organized and well planned					
About Module 2 Trademarks: The contents of the lesson plan were easily applied in the classroom					
About Module 2 Trademarks: The suggested materials to be presented were clear and appropriate					
About Module 2 Trademarks: The duration of the activities was adequate according to the objectives					
About Module 2 Trademarks: The key questions for knowledge testing were adequate					
About Module 3 Copyright: The objectives of the module and the lesson plan were clear					
About Module 3 Copyright: The content was organized and well planned					
About Module 3 Copyright: The contents of the lesson plan were easily applied in the classroom					
About Module 3 Copyright: The suggested materials to be presented were clear and appropriate					
About Module 3 Copyright: The duration of the activities was adequate according to the objectives					
About Module 3 Copyright: The key questions for knowledge testing were adequate					
About Module 4 Patents: The objectives of the module and the lesson plan were clear					

About Module 4 Patents: The content was organized and well planned					
About Module 4 Patents: The contents of the lesson plan were easily applied in the classroom					
About Module 4 Patents: The suggested materials to be presented were clear and appropriate					
About Module 4 Patents: The duration of the activities is adequate according to the objectives					
About Module 4 Patents: The key questions for knowledge testing were adequate					

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

2.3 Questionnaire for students

	3d Printing	Environmental Engineering	Mathematics	Physics	Robotics	Social Studies
Which subject did you test?						

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.*
	General assessment				
My expectations regarding the course were met					
The course helped me to understand better the importance of Intellectual Property in STEAM subjects					

The course gave me important knowledge and resources to apply Intellectual Property in STEAM subjects					
The topics and contents of the course were relevant					
The duration of the course was adequate to its objectives					
The proposed activities were original					
I enjoyed to participate in the course					
The teacher(s) was/were knowledgeable on the theme of Intellectual Property application in STEAM subjects					
The teacher(s) was/were available for any clarification					
The technologies, materials and resources used were effective					
I would recommend this course to others					
My general evaluation of the course is positive					
Modules assessment					
About Module 1 Design: the objectives of the module and the lesson plan were clear					
About Module 1 Design: the content was organized and well planned					

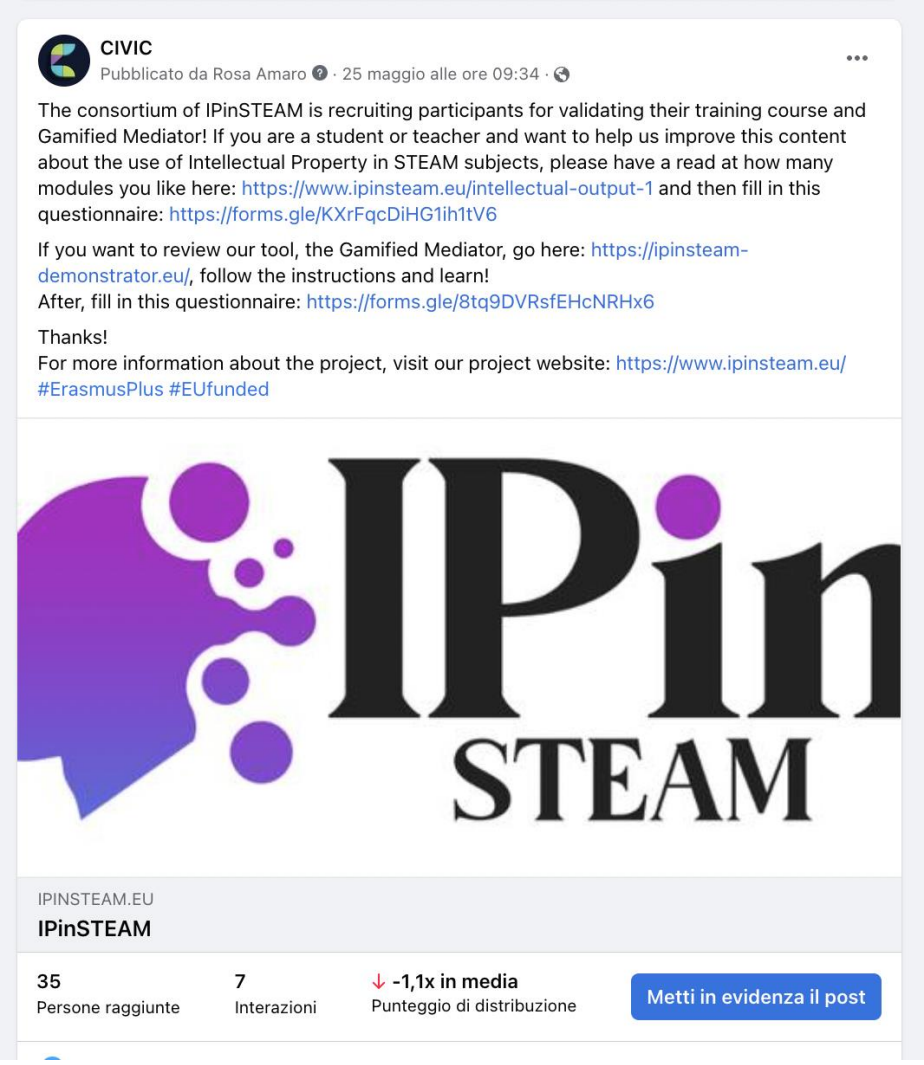
About Module 1 Design: the materials and resources were appropriate					
About Module 1 Design: the duration of the activities was adequate according to the objectives					
About Module 1 Design: I was confident in completing the key questions for knowledge testing					
About Module 1 Design: my evaluation of the module is positive					
About Module 2 Trademarks: the objectives of the module and the lesson plan were clear					
About Module 2 Trademarks: the content was organized and well planned					
About Module 2 Trademarks: the materials and resources were appropriate					
About Module 2 Trademarks: the duration of the activities was adequate according to the objectives					
About Module 2 Trademarks: I was confident in completing the key questions for knowledge testing					
About Module 2 Trademarks: my evaluation of the module is positive					
About Module 3 Copyright: the objectives of the module and the lesson plan were clear					
About Module 3 Copyright: the content was organized and well planned					
About Module 3 Copyright: the materials and resources were appropriate					

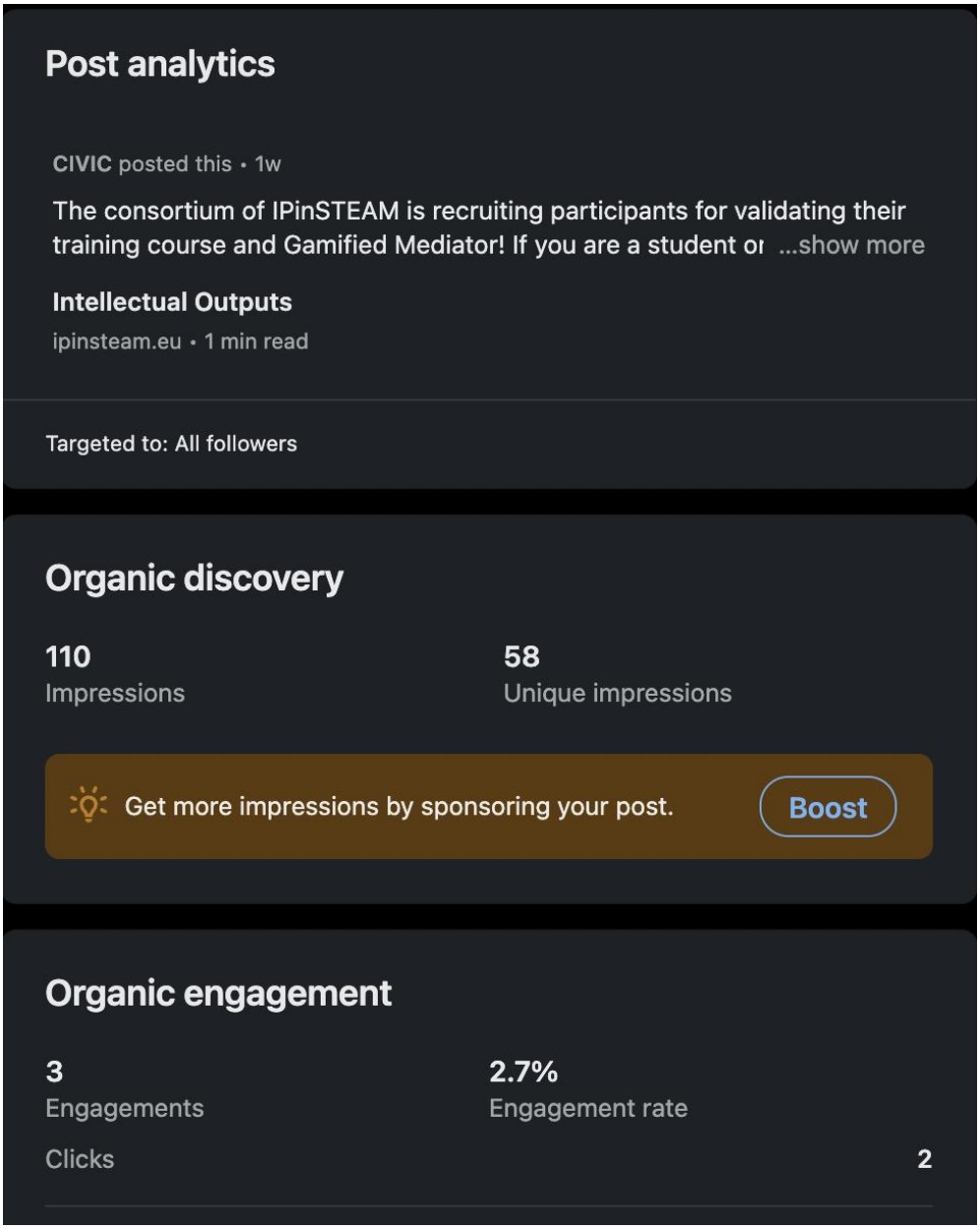
About Module 3 Copyright: the duration of the activities was adequate according to the objectives					
About Module 3 Copyright: I was confident in completing the key questions for knowledge testing					
About Module 3 Copyright: my evaluation of the module is positive					
About Module 4 Patents: the objectives of the module and the lesson plan were clear					
About Module 4 Patents: the content was organized and well planned					
About Module 4 Patents: the materials and resources were appropriate					
About Module 4 Patents: the duration of the activities was adequate according to the objectives					
About Module 4 Patents: I was confident in completing the key questions for knowledge testing					
About Module 4 Patents: my evaluation of the module is positive					

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

3. Conclusions

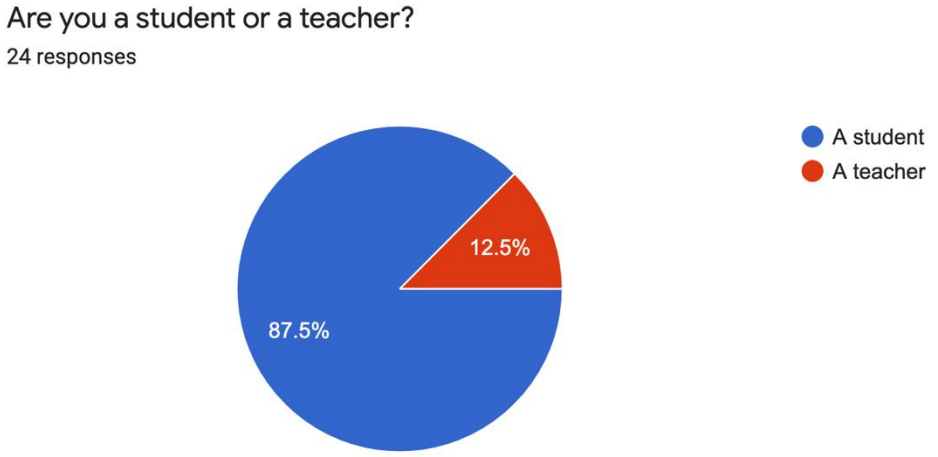
CIVIC conducted the Validation activities of the First Intellectual Output testing the IPinSTEAM training course with participants of the target group.
The training material was tested along with the testing of the project's second Intellectual Output result, the Dynamic Demonstrator.
However, the fact that CIVIC doesn't hold many collaborations with schools, made it difficult to reach 20 teachers and 5 students. Nonetheless, CIVIC managed to reach 3 teachers and 21 students from the target group.
The main channel of dissemination used to reach participants was social media: mainly CIVIC's Fb page and their LinkedIn account (see pictures below).



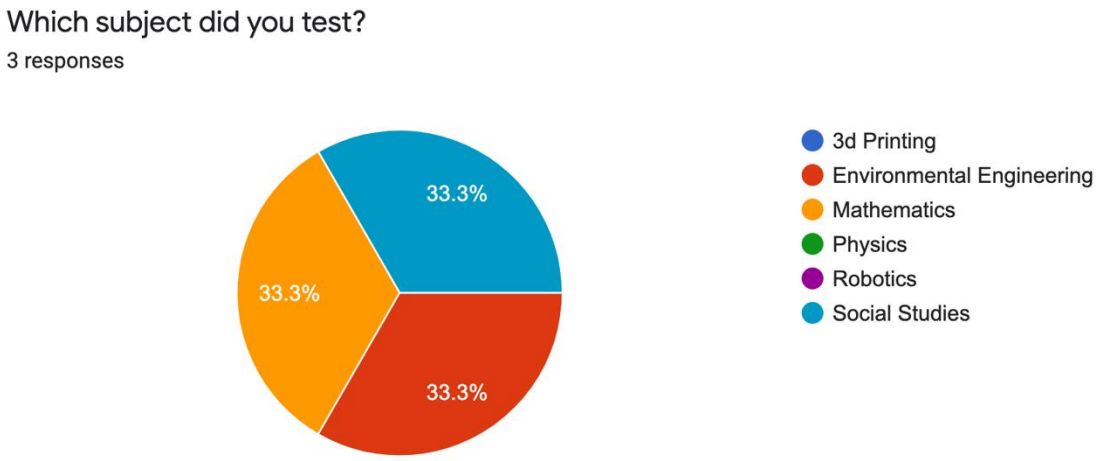


The validating activities took place from the 25th May 2022 to the 30th June 2022 and the final number of participants reached was 24.
Results from the validating activities of the IPinSTEAM training course will be analysed in more detail.

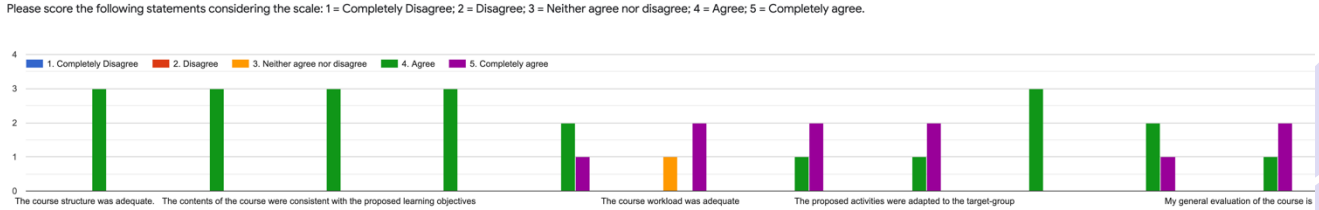
As mentioned before and as shown in the chart below, of all 24 participants reached, only 3 were teachers while the rest was composed by students.



In order to provide a more detailed report with specific findings, results from teachers and students will be analysed separately.
Firstly, teachers' answers will be analysed.
In terms of subjects tested, the 3 teachers reached tested Social Studies, Mathematics and Environmental Engineering.



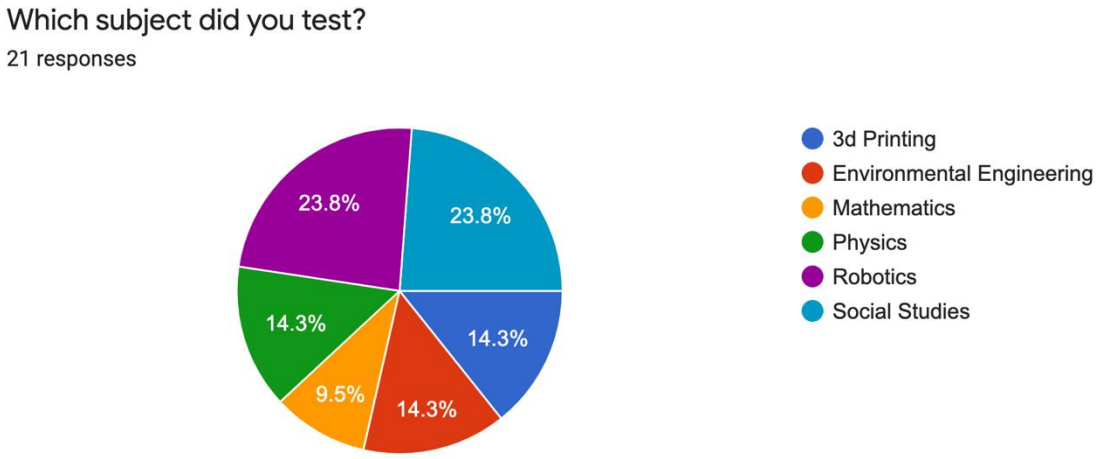
In terms of general overview and review of the training course the reviews show a big appreciation and positive feedback. Most of the answers (see graph below) were between "Agree" and "Completely agree", which show a very positive result for our project outcome.
When asked if students were engaged in the course activities, the 3 teachers answers "Agree", which is also a very positive result for the consortium to achieve.



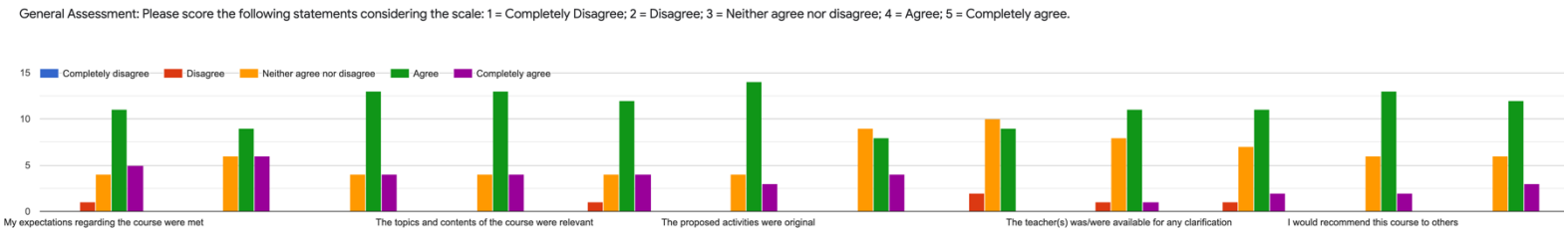
In the second part of the questionnaire for teachers, participants were asked more specifically about reviewing the different modules of the subjects (copyright, design rights, trademarks and patents).

The series of questions proposed concerned the duration and appropriateness of the training material and general organisation of the content in the different modules.
As shown in the graphs above, the general reception of the content was overall positive with some slight negative remark for the Copyright Module. However, it is possible to observe that the main answers given and colours shown are green, yellow and purple which correspond to “Neither agree nor disagree”, “Agree” and “Strongly agree”.
This shows that the teachers reached had very positive opinions about the organisation and quality of the training material developed.
In the final part of the teachers’ questionnaire, when asked for any additional comments or feedback, one teacher wrote that *students were very engaged and interested in the activities as Intellectual Property is not usually a concept that is taught or of common knowledge.*

As mentioned before, 21 students were reached to test the training content of the IPinSTEAM project. Their results will be analysed now separately.
Same as for the teachers, students were also asked what subject they chose to test. The variety of answers guven was quite heterogenous (see the chart below).



When asked to score the statements about their expectations about the course, relevance of topics and content, originality of the activities proposed, if they enjoyed the activities proposed, their general evaluation of the course and if they would recommend the course to others, once again it's possible to observe that their general feedback is positive.
Looking at the graphs below, the main answer given by the 21 students reached was "Agree", which is the highest answer given in all questions.
Some slight negative remarks can be observed in questions 8,9,10 which were about the availability of teachers for clarifications during the activities proposed, and the effectiveness of the technologies and resources used.
This minor negative feedback could be conducted to the fact that being the piloting activities conducted mainly online, it could mean that some students mainly tested the training course on their own, with no teachers being present. That could explain the negative answers given to those questions.
Apart from this small point, the majority of participants seemed to react very positively to the training course.



Same as for teachers, students were also asked to review individually every single IP concept of the subject they chose to test. If observing the graphs below, once again it's possible to observe the majority of answers going from "Neither agree nor disagree" to "Completely agree".
Overall results seem to be positive.
However, in this section of answers too, it's noticeable that some answers given were "Disagree", more specifically in the Design module, Trademark and Patents.
The proportions are almost insignificant though, if compared to the majority of positive feedback.

To conclude, CIVIC recruited 24 participants for the validating activities of the IPinSTEAM's first Intellectual Output result, which is the training material.
The training material was tested along with the testing of the project's second Intellectual Output result, the Dynamic Demonstrator.
All participants were mostly recruited through CIVIC' social media, through actions of dissemination campaigns.
The activity required the recruitment of 20 teachers and 5 students, which represented an important challenge for CIVIC, that managed to recruit only 3 teachers and 21 students.
The number of participants reached, although different than the one proposed in the proposal, is still within the number of participants needed and most importantly, within the project target group.
The piloting activities of the training course took a slightly over a month to reach the following results.
Overall, all subjects were tested by both teachers and students which made the feedback quite complete in terms of differentiation.
Additionally, participants seemed to react quite positively to the efficiency of the training course.
Answers given were generally positive, with vert few imperceptible negative remarks.
Mostly all participants found the course effective and would recommend it to others, which is a very important result for our project's outcome.

4. References

Please use APA Style to write down your references.