Intellectual Output 1

A6: Validation exercises

Deliverable: A6

IPin STEAM

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INOVA+
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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			

Contents

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

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.					
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

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					
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

Since the aim of the testing was to build awareness regarding the documents developed within IO1-IPinSTEAM Training Course, 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.

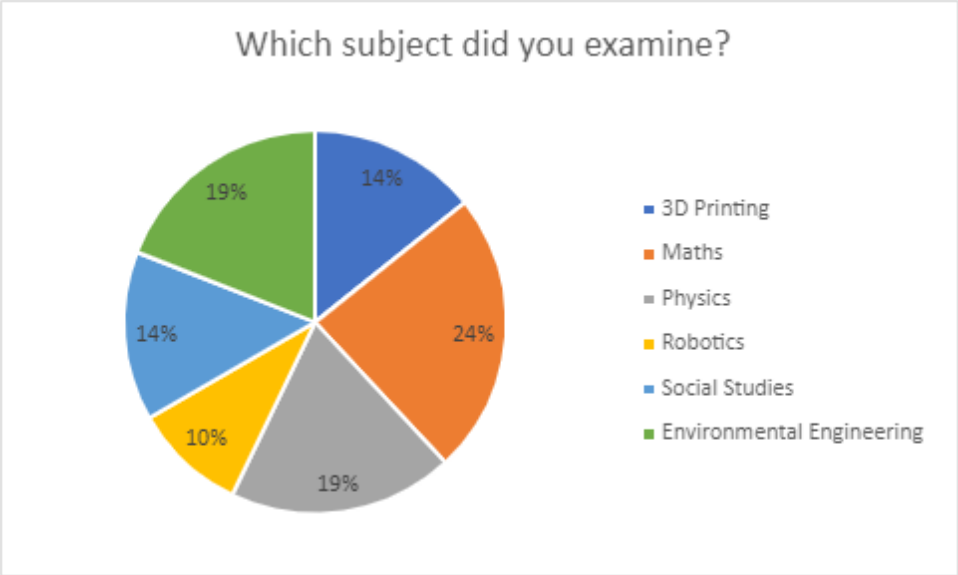
In the piloting phase the subjects that were examined are the following:

- 3D Printing
- Environmental Engineering
- Math's
- Physics
- Robotics

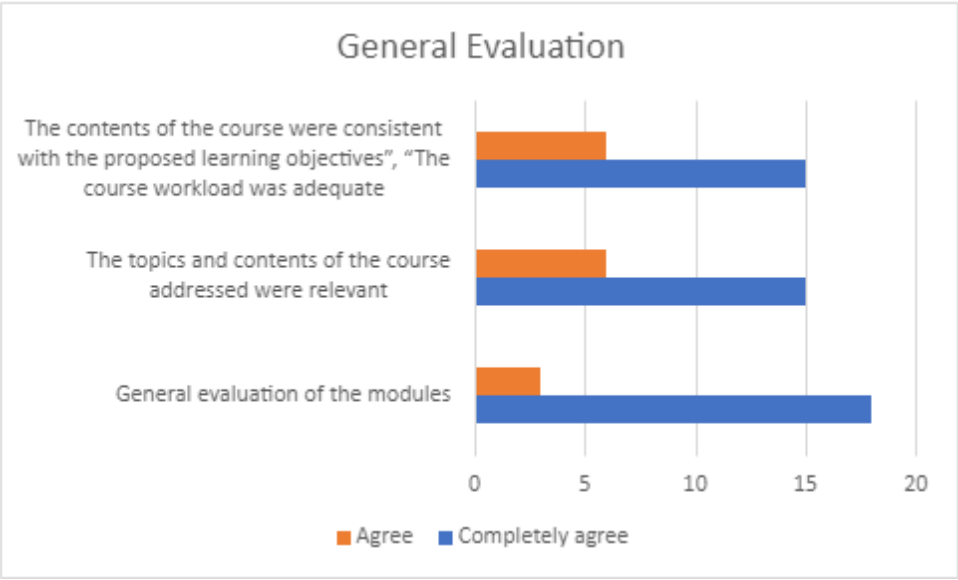
- Social Studies

SECTION: Teachers

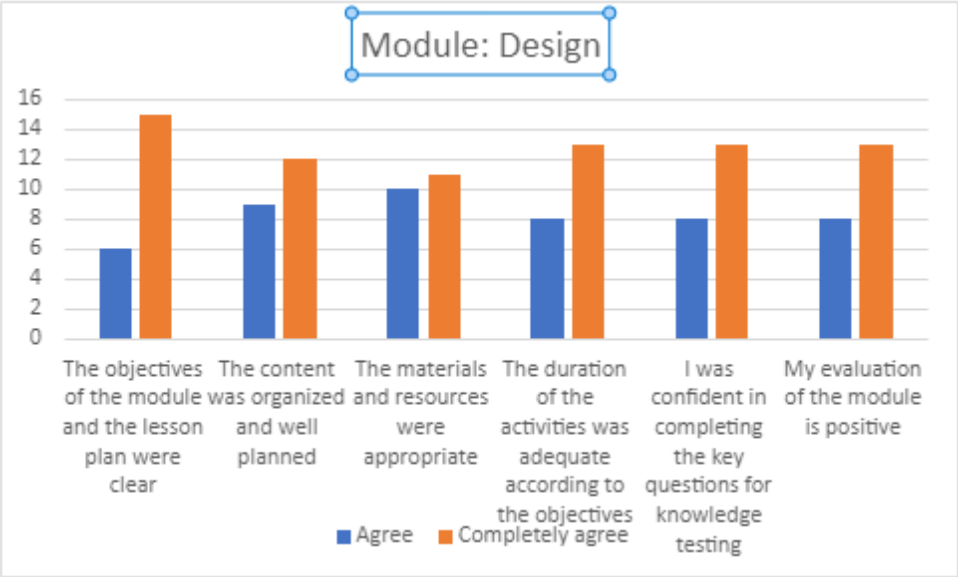
More specific, 3 examined the subject of 3D Printing, 4 the subject of Environmental Engineering, 5 the subject of Math's, 4 the subject of Physics, 2 the subject of Robotics, 3 the subject of Social Studies.



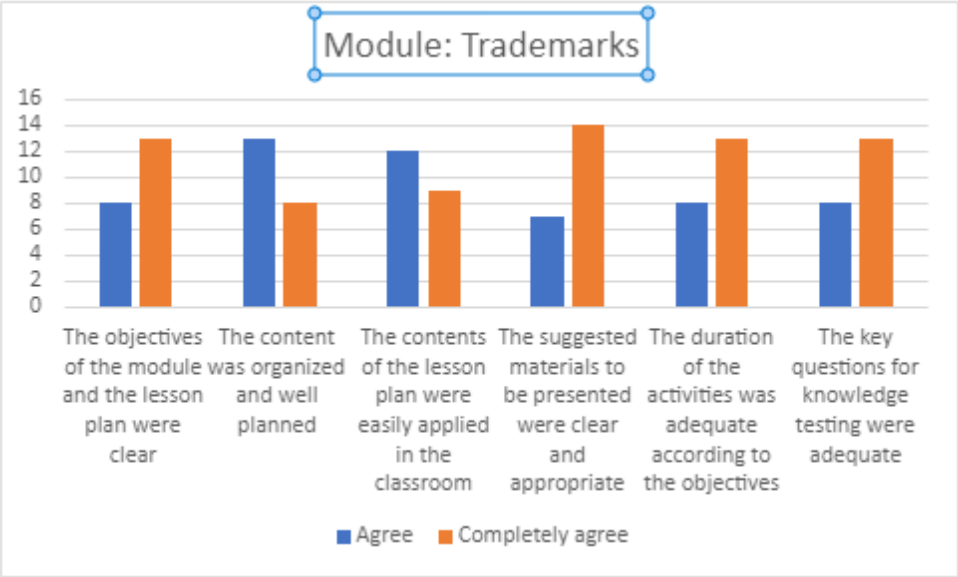
The first question was about the general evaluation of the modules. 85% of the participants answered “completely agree” regarding the positive evaluation of the course. The rest of them 15% agree. Very positive answers collected the statements “The topics and contents of the course addressed were relevant”, “The contents of the course were consistent with the proposed learning objectives”, “The course workload was adequate” with 15 out of 21 “completely agree” and the other 6 “agree”.



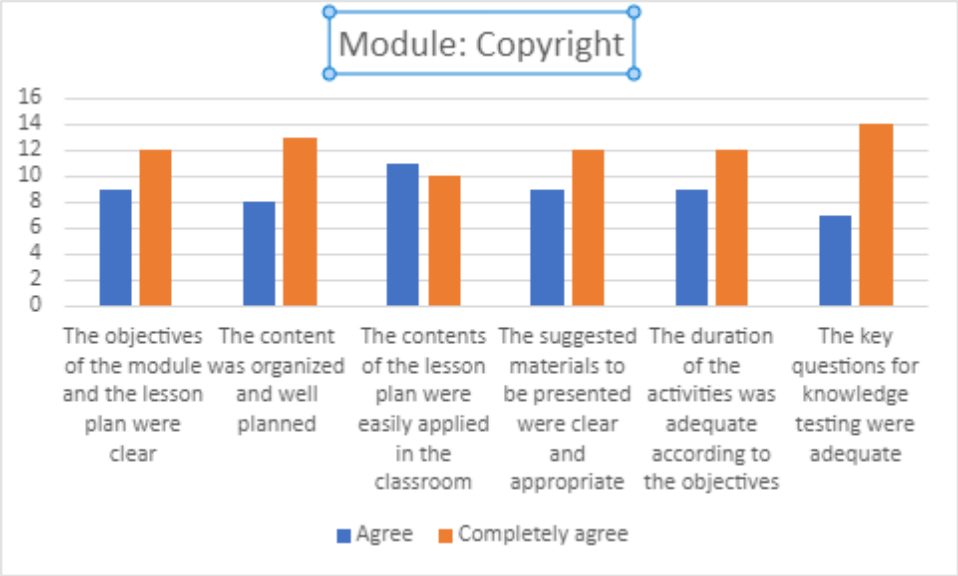
Moving on the second part of the questionnaire, the participants evaluated the 4 modules (Patents, Copyright, Trademarks, Design).



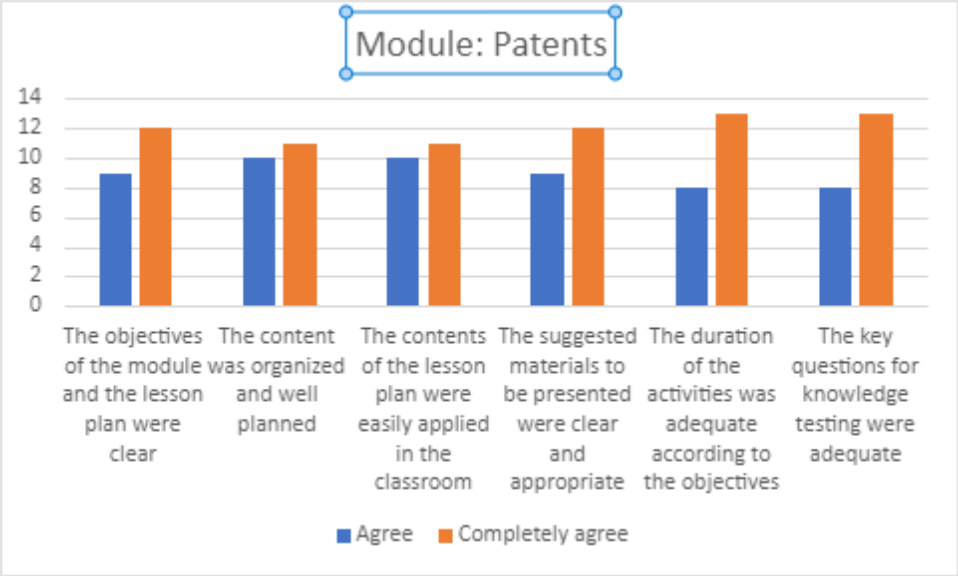
The duration of the activities and the key questions were evaluated positively by 21 persons (13 completely agree and 8 agree, in respectively).



In this case, the 61.9% “completely agree” with the statements “the objectives of the module and the lesson plan were clear”, “The duration of the activities was adequate according to the objectives” and “The key questions for knowledge testing were adequate”. The 38.1% “agree”.



In this module, 14 persons out of 21 completely agree that the key questions for knowledge testing were adequate, and the rest agreed.



Regarding the last module Patents, 11 participants out of 21 show a completely agree that the content was organized and well planned, and 10 agree. The same number considers that the contents of the lesson plan were easily applied in the classroom.

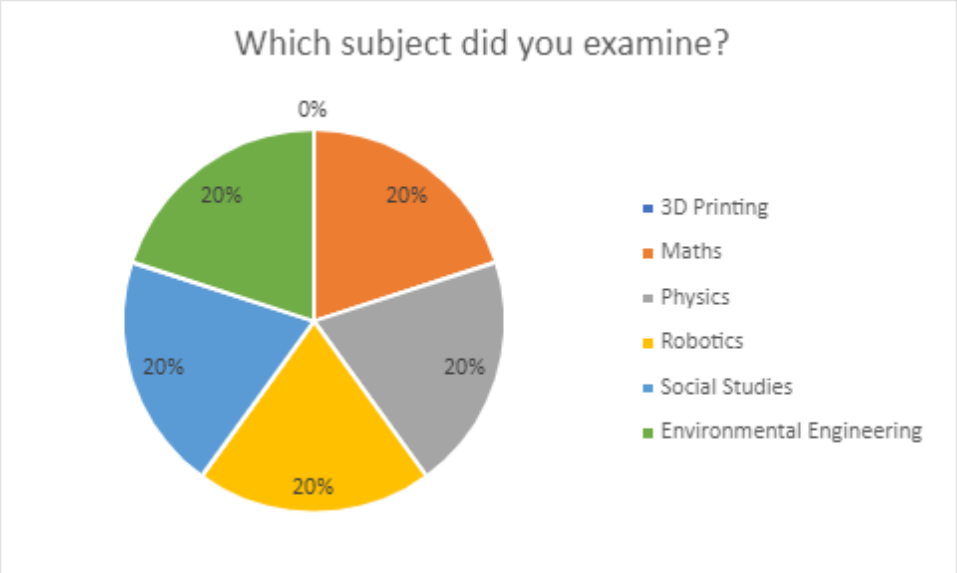
Finally, the participants had the opportunity to report any additional comments or issues regarding the modules. Responses were:

- The content was very practical
- The content is original y useful
- Very interesting
- “I like the practical example”
- “I really liked the case study. It is very easy to apply in the classroom”

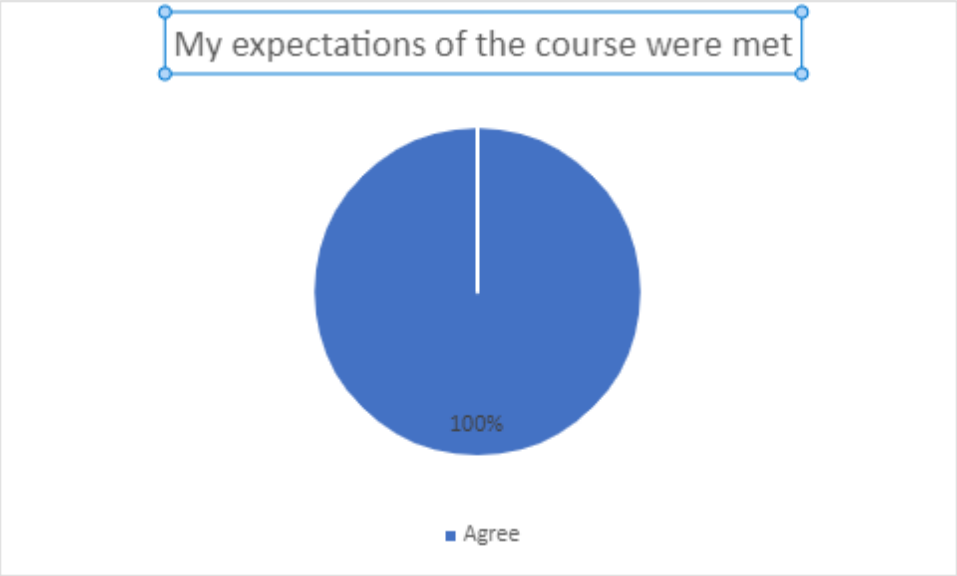
- “I liked the examples of famous commercial brands because the students pay more attention to things they know”
- The content is interesting to apply in the classroom
- Although the topic of robotic is difficult by itself, the content is very easy to apply in the classroom.

SECTION: Students

Moving on to the students, 1 examined the subject of Environmental Engineering, 1 the subject of Social Studies, 1 the subject of Math’s, 1 the subject if Physics and 1 the subject of Robotics.



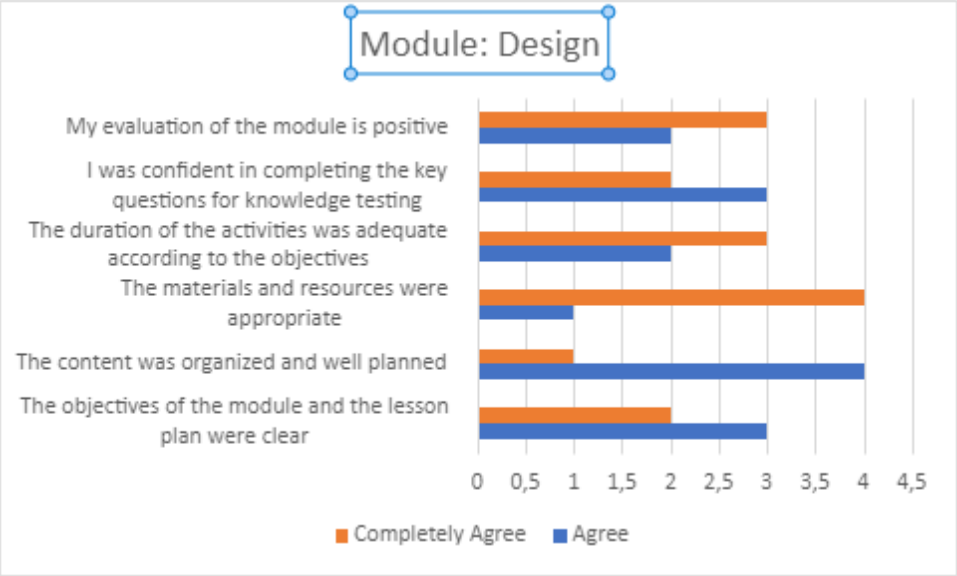
The first part of the questionnaire was a general evaluation.



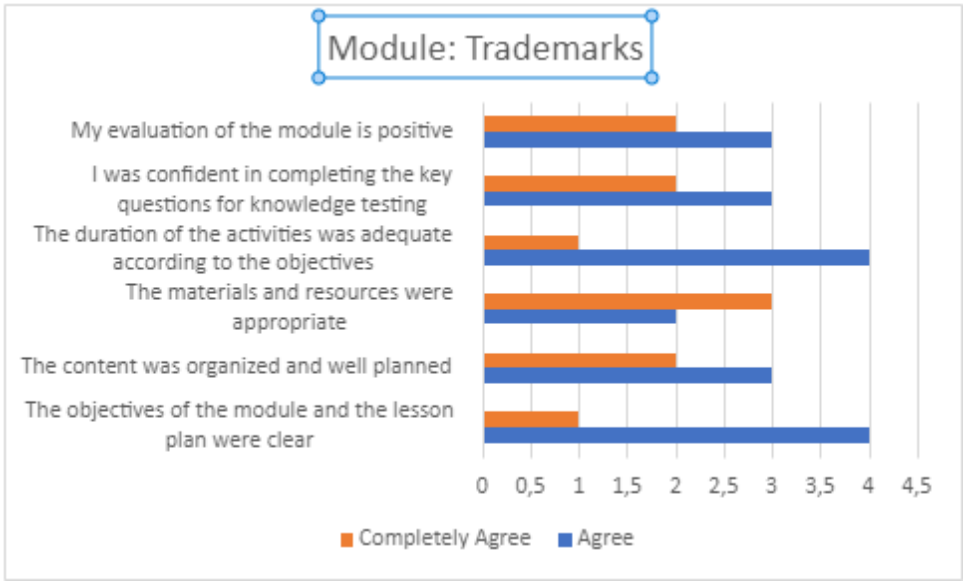
As we can see at the graph, the general evaluation of the course is quite positive with all of the students (100%) agreeing that their expectations of the course were met.

All students examined the same following modules:

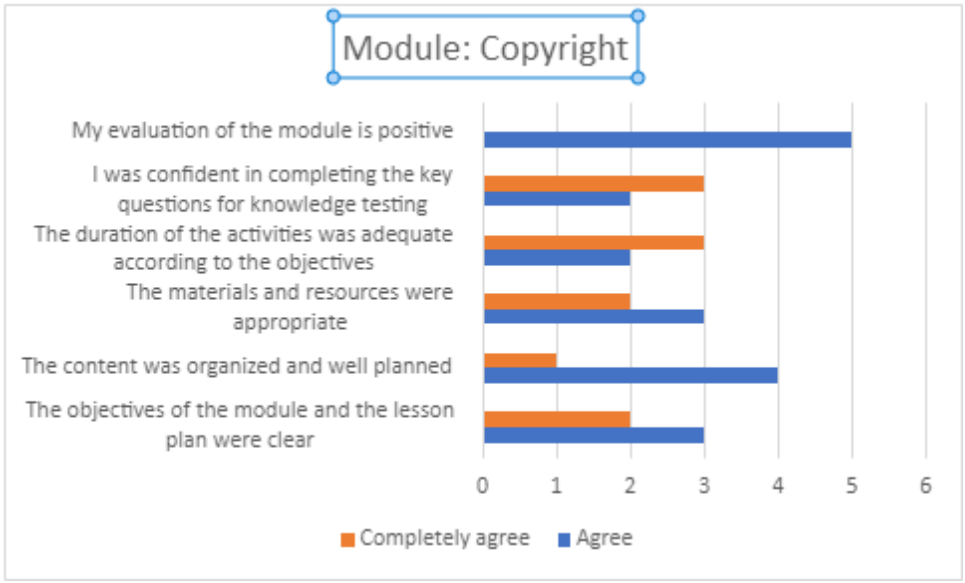
- Design
- Trademarks
- Copyright
- Patents



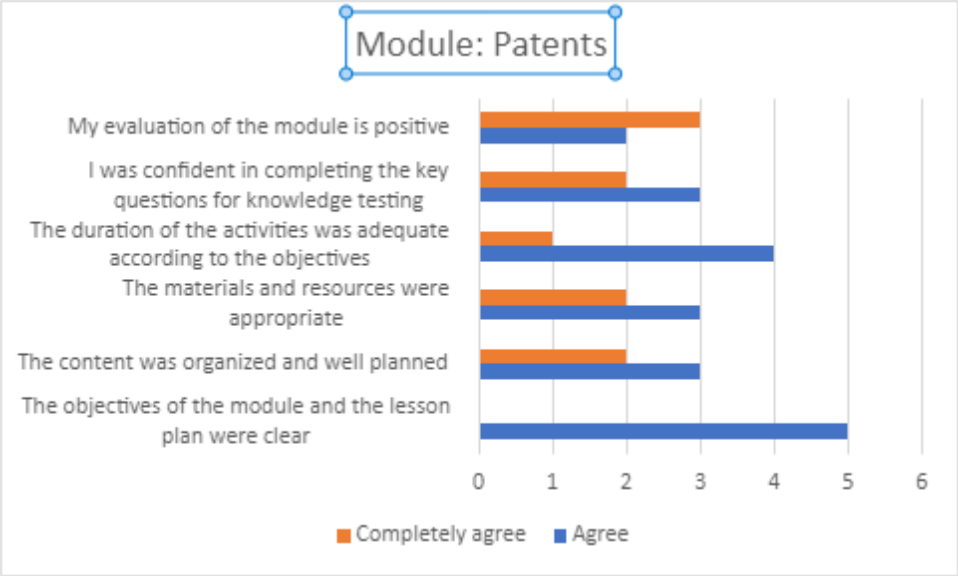
When we asked students about the consistence of Module of Design, 40% agree and 60% completely agree on the positive evaluation of it. The same number considered that the duration of the activities was adequate according to the objectives.



Moving on the Module Trademarks, 4 out 5 participants agree that the objectives of the module and the lesson plan were clear, as also the duration of the activities was adequate according to the objectives.



According to the graph, the module of Copyright was assessed in a good way too. All of them (100%) agree that the evaluation of the module is positive



With regard to the module Patents, here 5 out of 5 “agree” that the objectives of the module and the lesson plan were clear. For the 60% of the sample, the agree that they were confident in completing the key questions for knowledge testing, the content was organized and well planned, and the materials and resources were appropriate; and for the other 40% completely agree.

Moreover, to finalize the survey, participants were asked to stablish any comment regarding the training course. Here are their answers:

- My evaluation of the modules is very positive
- Very interesting

4. References

Please use APA Style to write down your references.