

# Intellectual Output 1

## A1: Needs Validation



Deliverable: IO1.A1.2 Country report

08.04.2021

ARC

Authored by: SANDRU IOANA

Project Number: 2020-1-UK01-KA201-078934

---

## Contents

Empowering innovation in STE(A)M through IP awareness .....	1
1. Introduction.....	3
1.1 The scope of the project.....	3
1.2 The project objectives .....	3
1.3 The project target group .....	3
2. National state of play .....	4
2.1 The scope of this report.....	4
2.2 Main results.....	5
3. Conclusions – Main findings .....	7

# 1. Introduction

## 1.1 The scope of the project

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 The project objectives

In order to address the lack of IP knowledge resulting in 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 achieve generating 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 STEM departments towards giving shape to the integration of IP concepts into STEAM curricula.

## 1.3 The project target group

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 in 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
- E-learning enthusiasts

## 2. National state of play

### 2.1 The scope of this report – Needs validation

The objective of the present report is to survey and analyze the profile, current views and needs of the project target group. This was done by distributing an online questionnaire to a national network of contacts, mostly in-service school teachers. During Feb-Mar 2021 in total 27 anonymous replies were collected.

The questionnaire/online form consisted of the following questions/fields to answer

1. Country
2. Occupation
3. I confirm i am over 18 years old.
4. Do you know what Copyright is?
5. When it comes to Mathematics, do you think that a theory and/or a formula are subjects to copyright?
6. When your scientific work is published, you transfer copyright to the publisher. Can you keep the right to be attributed as an author?
7. Which of the following CC licenses have you used for your work?
8. You can use an artistic work for certain purposes such as educational use, research or study or criticism or review. In which case(s) you do not need a copyright permission?
9. Google has a lot of materials (images, articles, etc.), but not all of them are free to grab. Assuming that you also use Google for your work, do you get permission before you use it?
10. Can engineering plans and drawings be protected by copyright?
11. Do you think integrating Copyright in STEAM teaching is important?
12. Do you know what patents are?
13. Where do you usually search for patents?
14. In case you are using patents from available online resources, do you ask permission in terms of copyright before using them?
15. Do you encourage your students to sketch out patent drawings to go along with their STEAM inventions?
16. Do you think integrating Patents in STEAM teaching is important?
17. Do you know what trademarks are?
18. Trademarks protect...
19. Have you ever registered any trademark related to your STEAM work/inventions?
20. Do you think integrating Trademarks in STEAM teaching is important?
21. Assess the level of your teaching skills. (1-very low, 5-very high) [Communication]
22. Assess the level of your teaching skills. (1-very low, 5-very high) [Team Work/Collaborative Skills]
23. Assess the level of your teaching skills. (1-very low, 5-very high) [Critical Thinking]
24. Assess the level of your teaching skills. (1-very low, 5-very high) [Creativity]

25. Assess the level of your teaching skills. (1-very low, 5-very high) [Organizational Skills]
26. Assess the level of your teaching skills. (1-very low, 5-very high) [Flexibility]
27. Assess the level of your teaching skills. (1-very low, 5-very high) [Problem-Solving]
28. Assess the level of your teaching skills. (1-very low, 5-very high) [Patience]
29. Assess the level of your teaching skills. (1-very low, 5-very high) [Pro-activeness]
30. Assess the level of your teaching skills. (1-very low, 5-very high) [Open-mindedness]

## 2.2 Main results

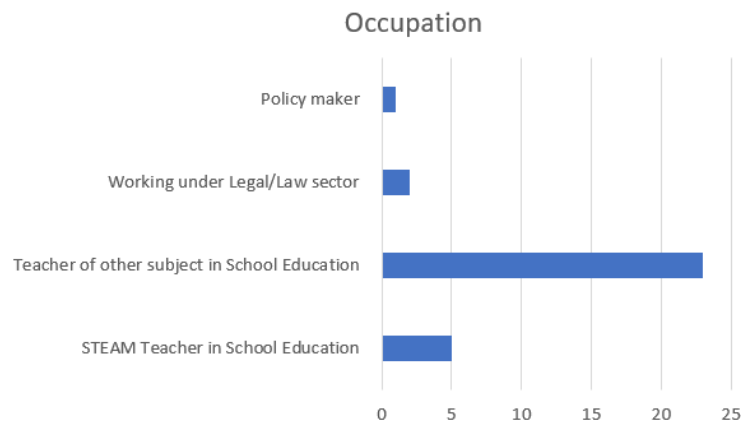
Below are listed the results per question/field to answer

### 1. Country

**31 answer Romania**

### 2. Occupation

- STEAM Teacher in School Education = 5
- Teacher of other subject in School Education = 23
- Working under Legal/Law sector = 2
- Policy maker = 1

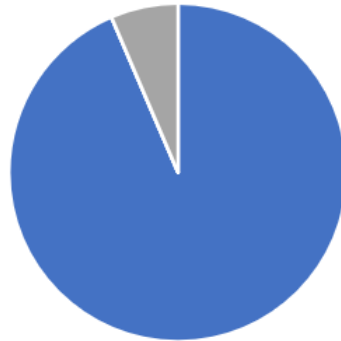


### 3. I confirm i am over 18 years old.

**31 answer Yes**

### 4. Do you know what Copyright is?

Do you know what Copyright is?



■ yes 29 ■ no 0 ■ maybe 2

5. When it comes to Mathematics, do you think that a theory and/or a formula are subjects to copyright?

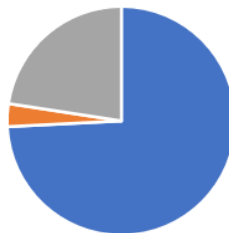
When it comes to Mathematics, do you think that a theory and/or a formula are subjects to copyright?



■ yes 5 ■ no 20 ■ maybe 6

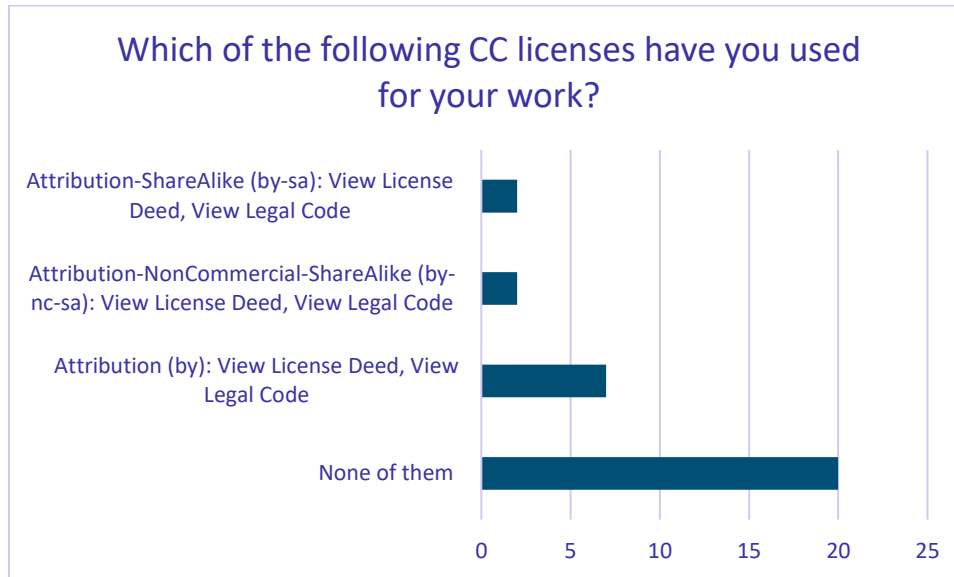
6. When your scientific work is published, you transfer copyright to the publisher. Can you keep the right to be attributed as an author?

When your scientific work is published, you transfer copyright to the publisher. Can you keep the right to be attributed as an author?

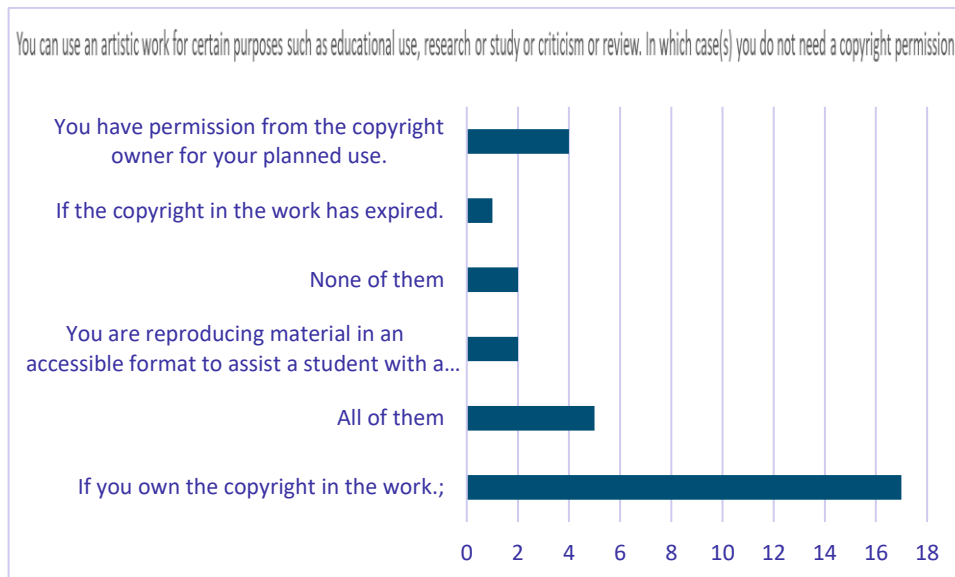


■ yes 23 ■ no 1 ■ maybe 7

7. Which of the following CC licenses have you used for your work?

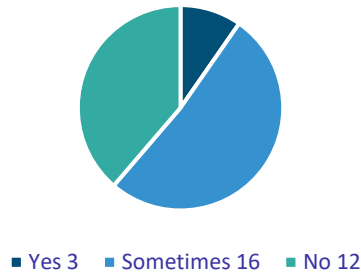


8. You can use an artistic work for certain purposes such as educational use, research or study or criticism or review. In which case(s) you do not need a copyright permission?



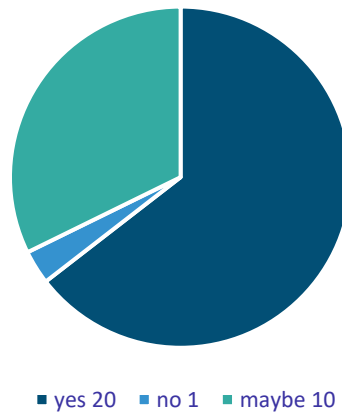
9. Google has a lot of materials (images, articles, etc.), but not all of them are free to grab. Assuming that you also use Google for your work, do you get permission before you use it?

Google has a lot of materials (images, articles, etc.), but not all of them are free to grab. Assuming that you also use Google for your work, do you get permission before you use it?



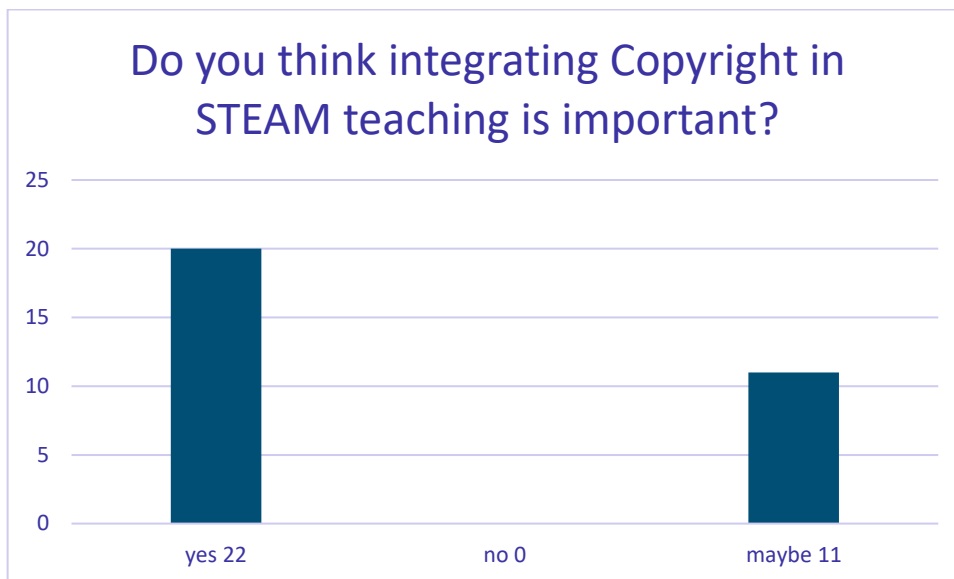
10. Can engineering plans and drawings be protected by copyright?

Can engineering plans and drawings be protected by copyright?

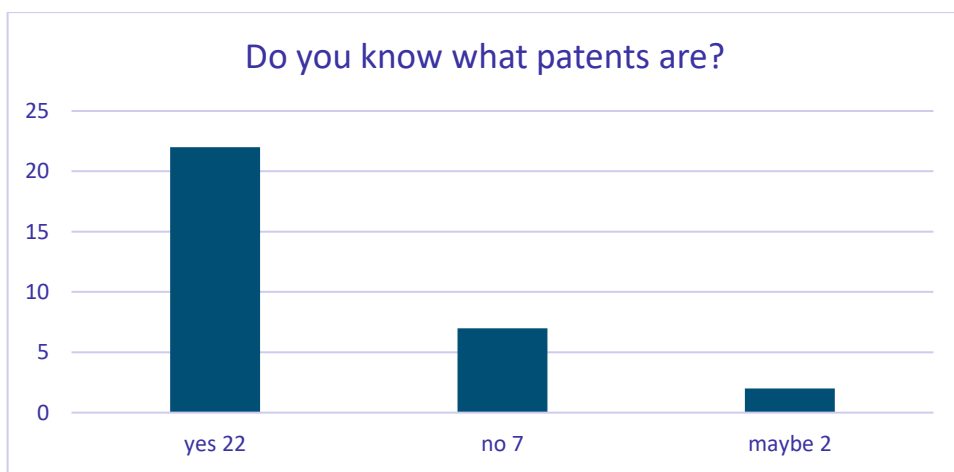


11. Do you think integrating Copyright in STEAM teaching is important?

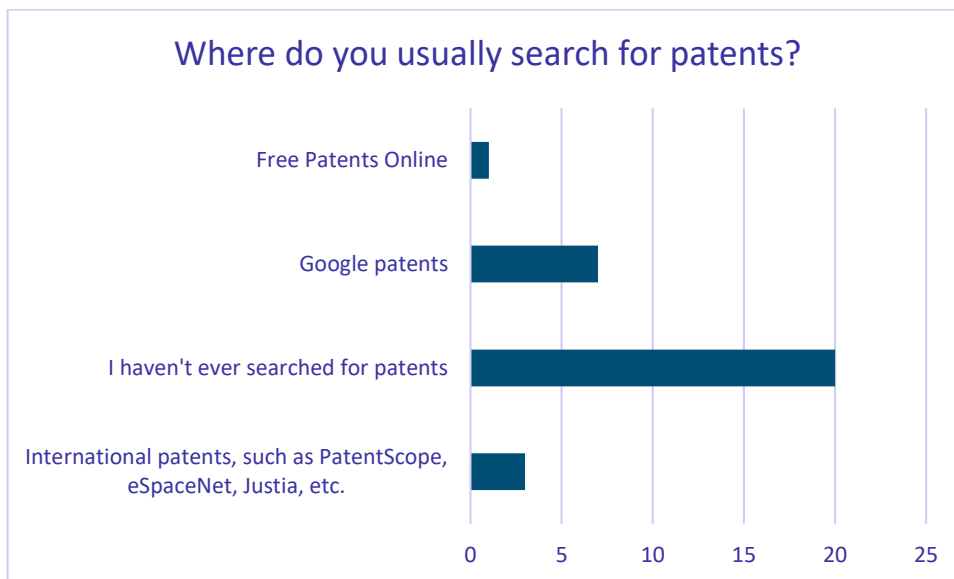




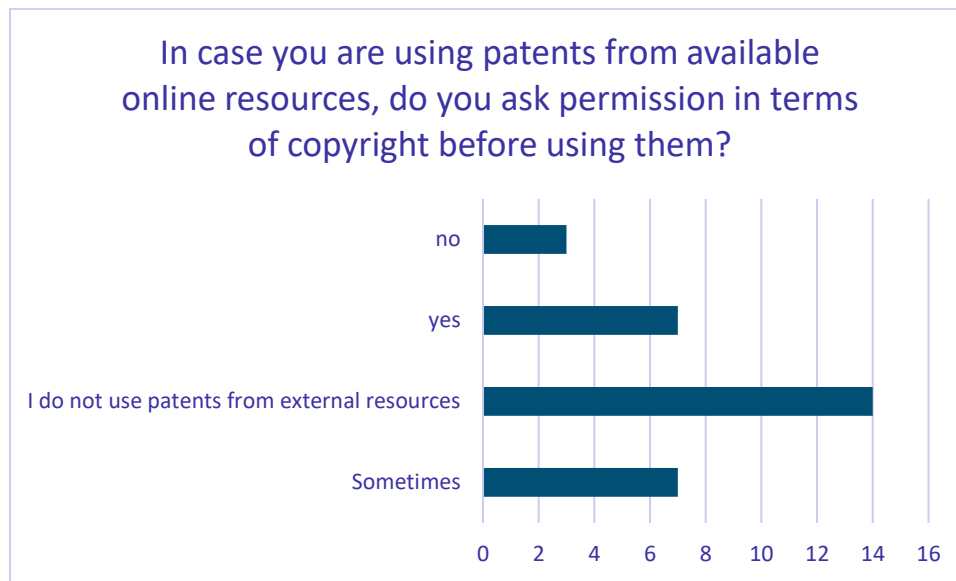
12. Do you know what patents are?



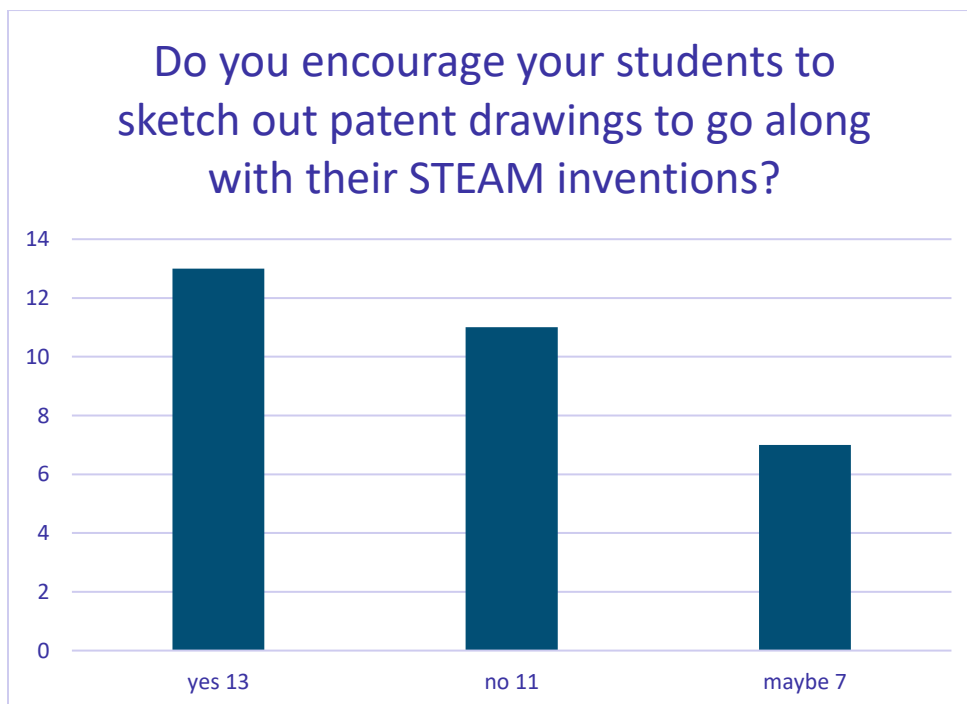
13. Where do you usually search for patents?



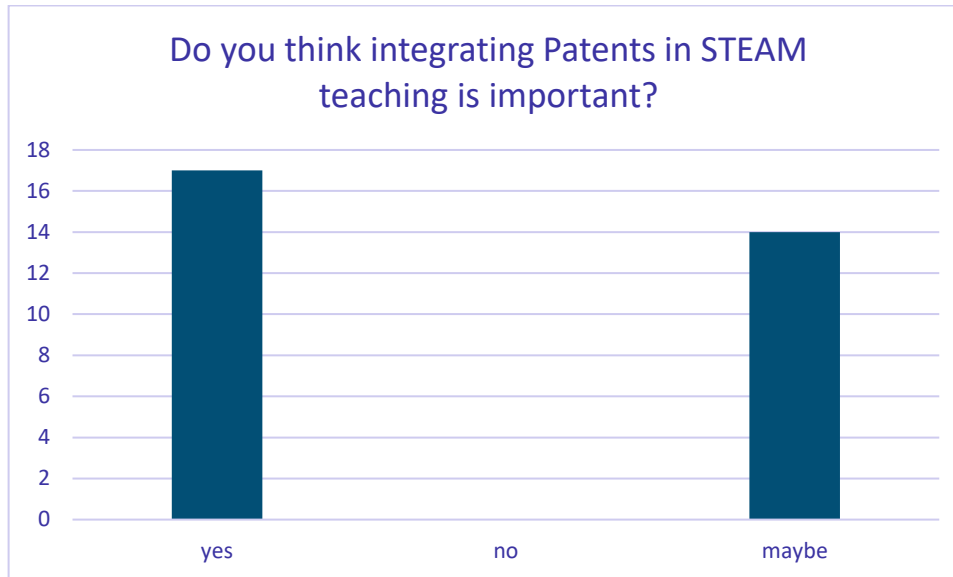
14. In case you are using patents from available online resources, do you ask permission in terms of copyright before using them?



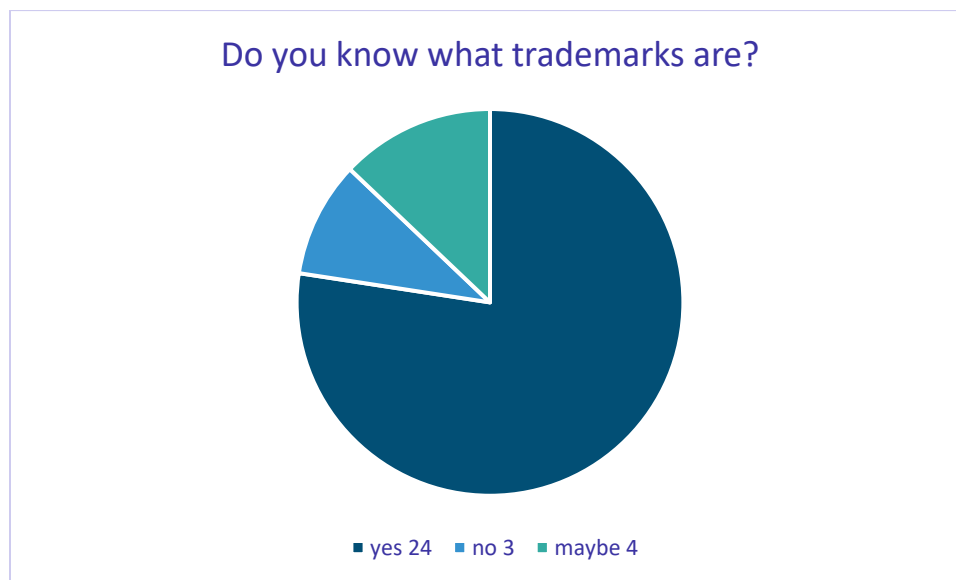
15. Do you encourage your students to sketch out patent drawings to go along with their STEAM inventions?



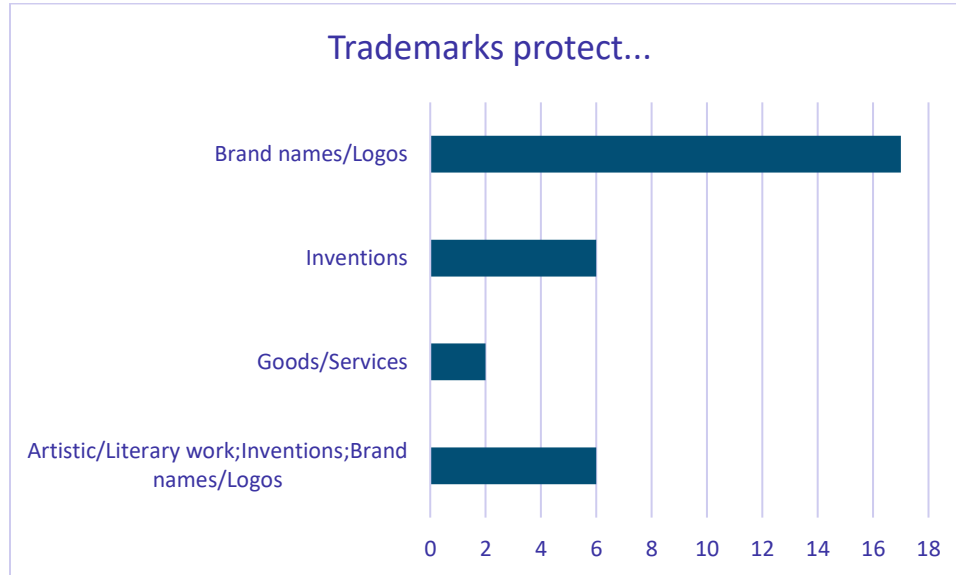
16. Do you think integrating Patents in STEAM teaching is important?



17. Do you know what trademarks are?



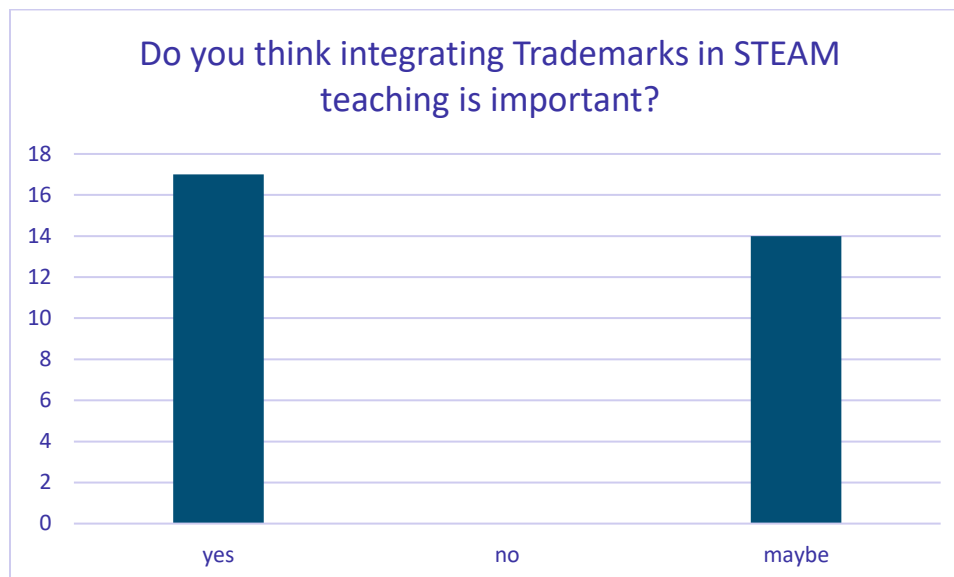
18. Trademarks protect...



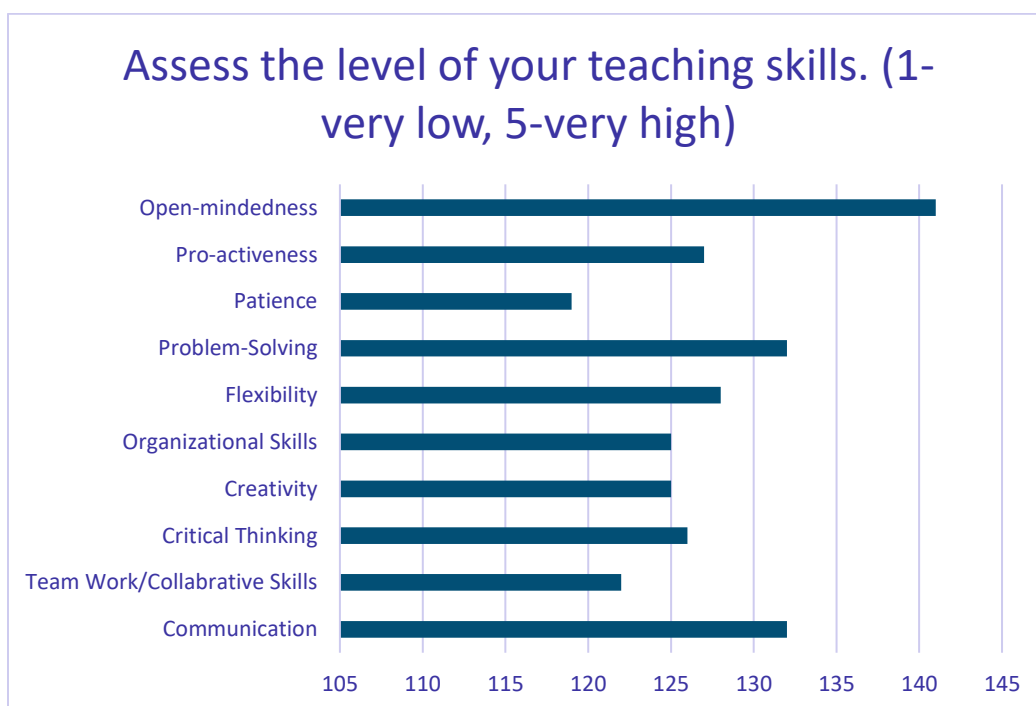
19. Have you ever registered any trademark related to your STEAM work/inventions?



20. Do you think integrating Trademarks in STEAM teaching is important?



21. Assess the level of your teaching skills. (1-very low, 5-very high) [Communication]
22. Assess the level of your teaching skills. (1-very low, 5-very high) [Team Work/Collaborative Skills]
23. Assess the level of your teaching skills. (1-very low, 5-very high) [Critical Thinking]
24. Assess the level of your teaching skills. (1-very low, 5-very high) [Creativity]
25. Assess the level of your teaching skills. (1-very low, 5-very high) [Organizational Skills]
26. Assess the level of your teaching skills. (1-very low, 5-very high) [Flexibility]
27. Assess the level of your teaching skills. (1-very low, 5-very high) [Problem-Solving]
28. Assess the level of your teaching skills. (1-very low, 5-very high) [Patience]
29. Assess the level of your teaching skills. (1-very low, 5-very high) [Pro-activeness]
30. Assess the level of your teaching skills. (1-very low, 5-very high) [Open-mindedness]



### 3. Conclusions – Main findings

The survey results show that in Romania, Teachers in Schools, of STEAM or other subject, consider that they have adequate knowledge of what copyright, patent or trademark is and how they are used. However, they have rarely used a CC license for their work or seek for permission of copyright or searched for a patent or registered a trademark themselves. At the same time on the positive side is the fact that the majority of them express the view that IP related education in STEAM is important to be integrated in teaching, especially the topic of copyright. With respect to patents and trademarks, their view is positive towards integration.

Regarding the level of their teaching skills, they self-reporting scores are high in all different attributes, e.g. Open-mindedness, Problem-Solving, Communication; Critical Thinking; Pro-activeness, Flexibility, Team Work/Collaborative Skills; Creativity; Organizational Skills, Patience;

In conclusion, the questionnaire IPinSTEAM evaluated the needs of school teachers in Romania on project subjects. It is a good instrument to encourage the introduction of IP related teaching subjects and practices in school curricula to be proper used by both teachers and students.