TRAINING NEEDS SURVEY – REPORT

Part of the THREE-D-PRINT project

Funded by the Erasmus+ Programme of the European Union

https://www.3dprint-training.com/

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PURPOSE OF THE REPORT

The aim of this report is to present the results from the "training needs survey", which had the objective to "interview" a selection of adult education trainers in various countries (via on-line questionnaire) on the training needs to incorporate 3D Printing teaching in adult education.

In total, there were 76 responses. Although the survey was available in English, Portuguese, Italian and Greek languages, the current report comprises the results of the combined responses from the survey in all languages.

SURVEY CONCLUSIONS

- Over 90% of the respondents agree that 3D Printing provides students with relevant skills for the future labour market.
- While trainers from schools and other education centres that have 3D Printing courses are familiar with 3D Printing and, to some extent, know how to work with it, most trainers from schools with no 3D Printing courses lack the skills to work with 3D Printing.
- The majority agrees that schools should give more training on 3D Printing.
- Most trainers agree that 3D Printing has the potential to increase student's engagement in class and sees a way to connect their teaching subject with 3D Printing.
- The majority of the respondents are in favor of more training in schools confirm the need for online courses and materials that can be used and adapted to suit specific curricula and training.

DETAILED SURVEY RESPONSES

Just like the survey, the results are divided in two sections: **identification** and the **use and applicability of 3D printing** in education by teachers/ trainers.

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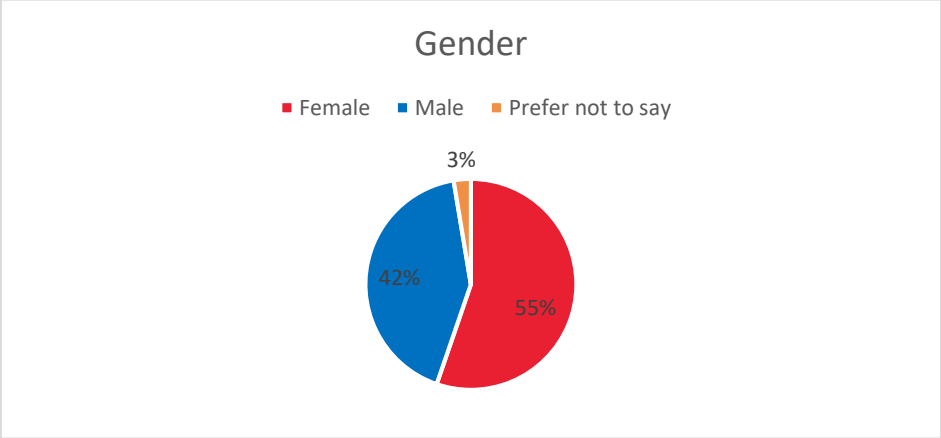
SECTION I – IDENTIFICATION

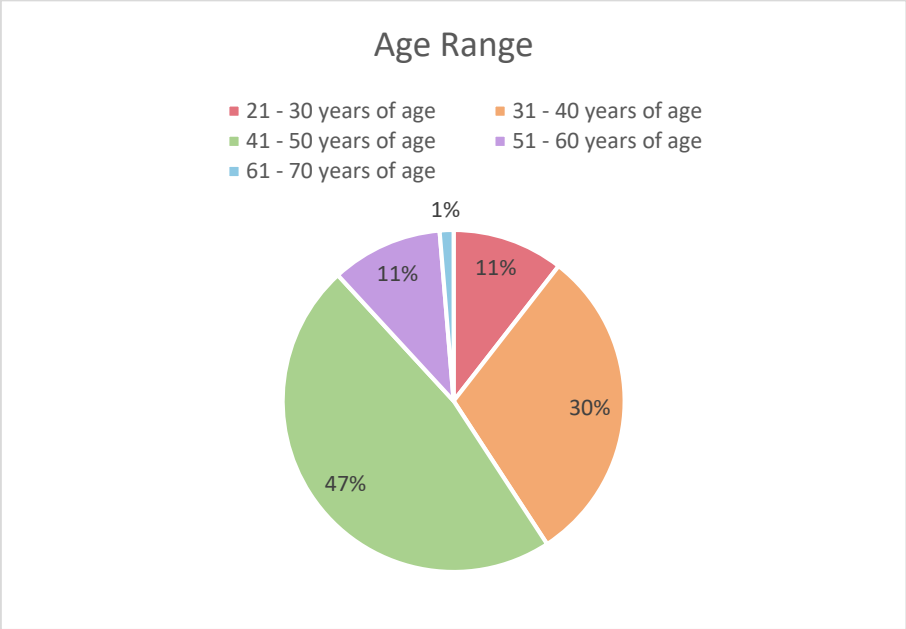
1. Gender

Out of 76 responses, 42 entries (55%) are female, 32 (42%) are male, and 2 (3%) preferred not to say.



2. Age range

The second question aimed at finding the age range of the teachers/trainers. No responses were collected from anyone up to 20 years nor from anyone with 71 years or over. The age range with the highest number was 41 – 50 years of range, which represents 47% of the responses (34 people). The rest of the responses are as follows:



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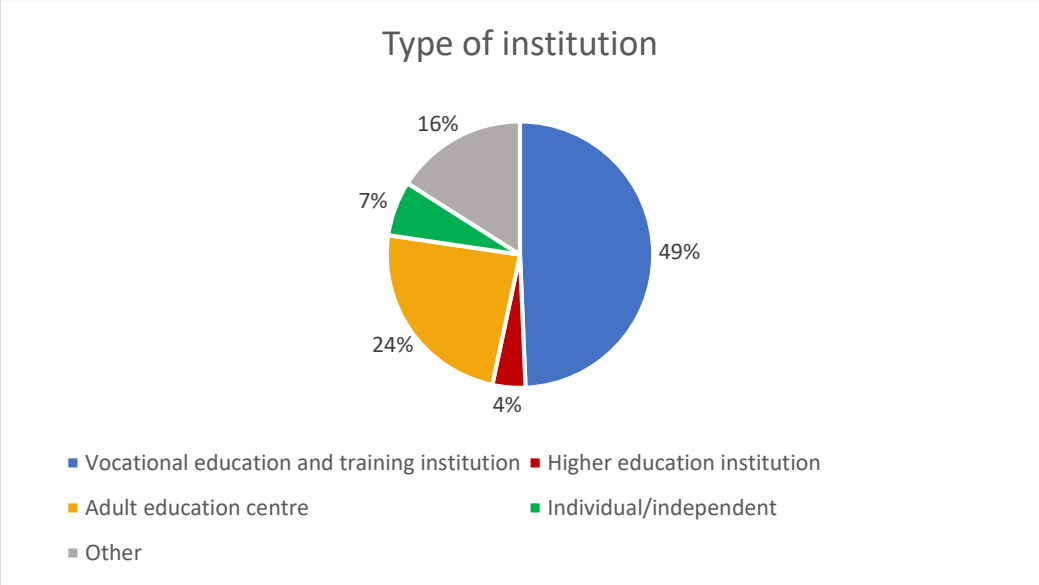
3. Type of institution

This question aimed at finding out the type of institution where the respondents have given training or taught to adults. The type of institution with the most responses was VET institutions, with 37 answers (49%), followed by adult education centres with 18 answers (24%).

There were a varied number of responses:



4. Stand-alone courses available in the institution

With the fourth question, the partnership wanted to understand if there were any 3D Printing stand-alone courses available in the institution where trainers/teachers have given training. While some institution offer more than one option, some instiututions have no available offer on 3D Printing. In total, the results were:

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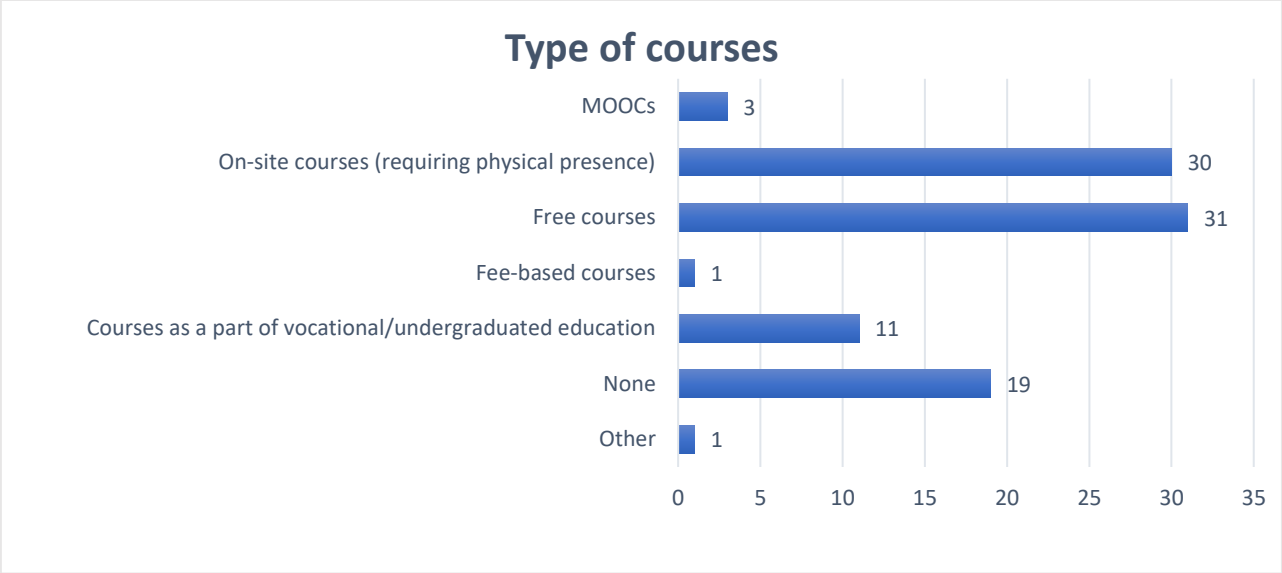
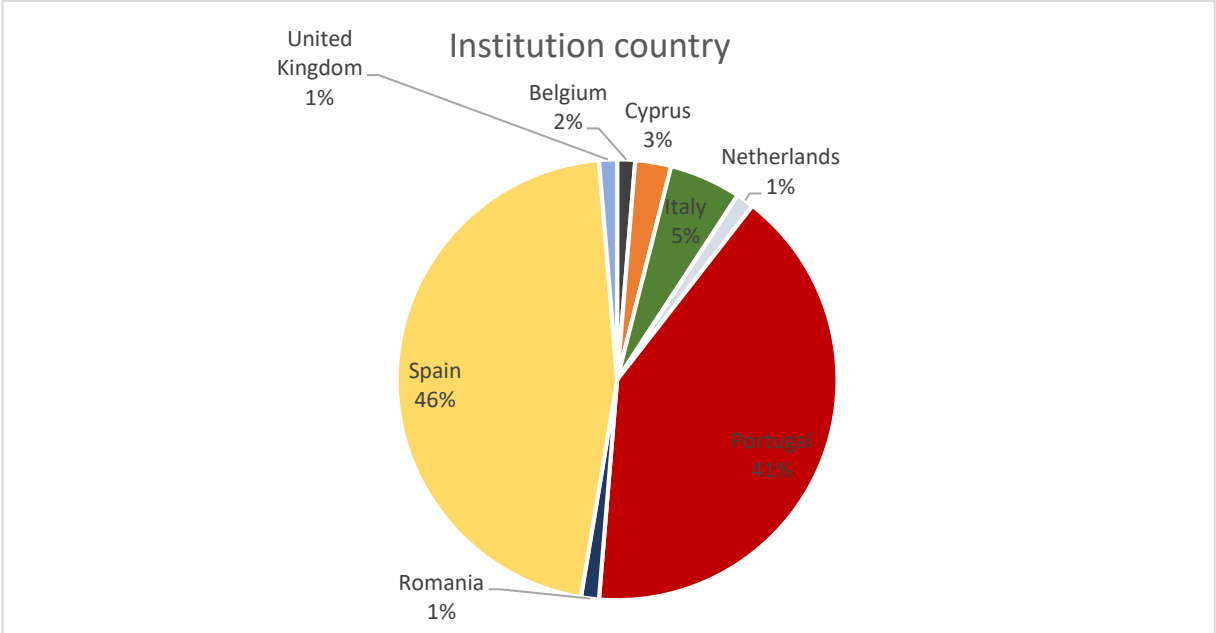


5. Country

The last question of the identification section aimed at finding out in what country are respondents' institutions based. Spain and Portugal received the most entries, with 35 (46%) and 31 (41%) entries respectively.



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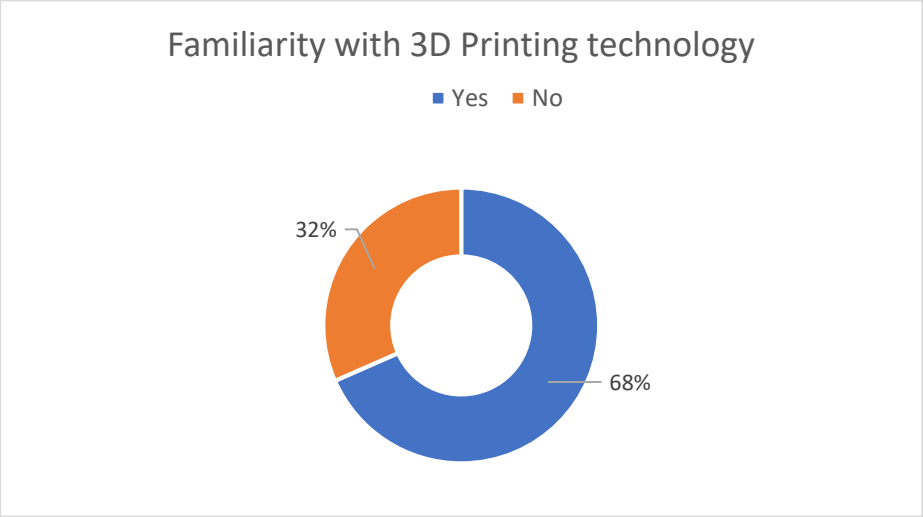
SECTION II – USE AND APPLICABILITY OF 3D PRINTING

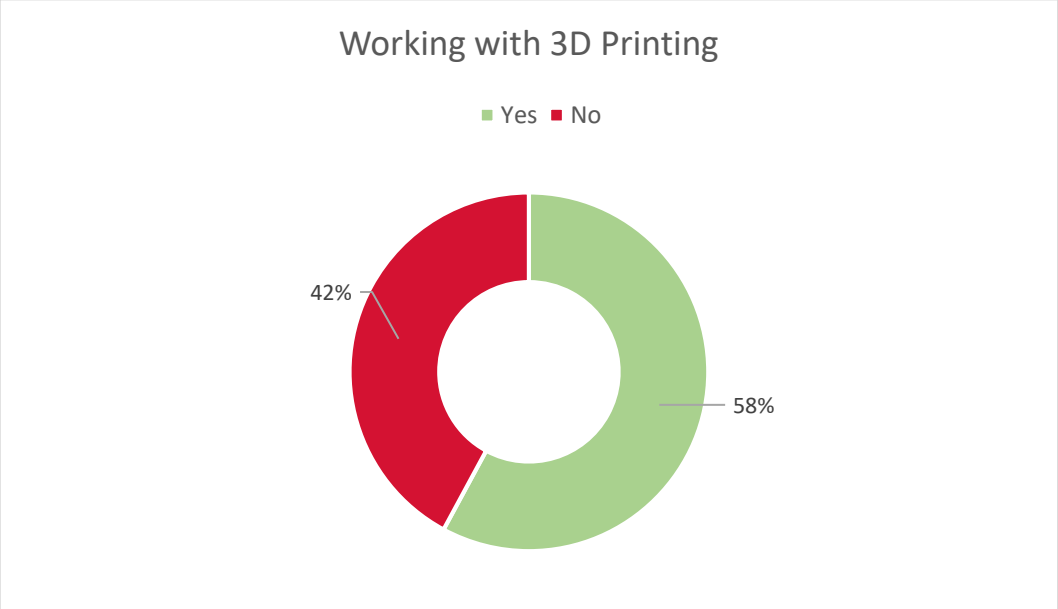
6. Are you familiar with the 3D Printing technology?

The sixth question of the survey was a YES/NO. 52 participants (68%) are familiar with the 3D Printing technology, whereas the rest (32%) are not.



7. Do you know how to work with 3D Printing?

The seventh question aimed at comprehending if the respondents knew how to work with 3D Printing. 44 participants (58%) answered "yes", while the others said "no.". The graphic below summarises the answers:



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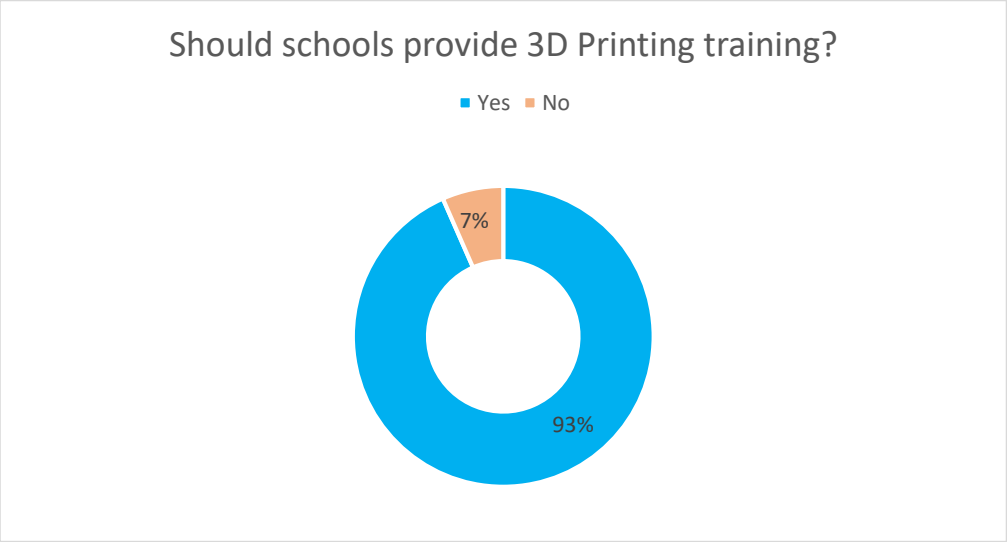
8. Do you think that schools and educational institutions should provide (more) 3D Printing skills/knowledge training?

Just like the previous two questions, question 8 was a YES/NO question. In this case, we wanted to know the opinions of the trainers/teachers on if they think schools, overall, should provide more 3D Printing skills/knowledge training at the institution. The majority of the participants (71) answered "yes".



9. How do you think 3D Printing could be used in your teaching subject(s)?

Responses for the ninth question, which was an open-ended one, were very diverse. In general, respondents said 3D Printing could be used to motivate students, to train soft skills, for businesses, to do prototypes, to provide new and more appellative ways of teaching, to make classes more practical and engaging. Some said it is possible to use it in any subject, others say it can only be used in technological subjects, and some still say it is not possible at all.

Here are a few examples of those responses/opinions:

- "We can teach 3D Printing processes to improve soft skills, besides they learn digital technologies to increase employability";
- "It could be used in any subject, because, in addition to learning the use of the 3D printer, the work groups train soft skills";
- "In computer science and technology subjects, although it could be used in anyone making models or sketches for various explanation";

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- "It is a good idea to integrate 3D thinking and object creation in the daily training of the assistants, in order to improve their thinking by improving or to a certain extent applying softskills.";
- "To motivate students by empowering the learning by doing method allowing them to go from concept to product/mock-up";
- "It would enhance both creative and entrepreneurial skills which are at the core of our qualification. It would be extremely suitable for our younger unemployed audience";
- "It can be used as a means to embody the 3D designs of the students to get a more elementary feedback to improve their design in terms of functionality and construction"
- "Although I do not teach technological subjects, it would always be interesting to bring the two together in order to make the subject of Art History more appealing to all students";
- "In the development of pedagogical materials of a more practical context";
- "3D printing could allow the production of anatomical and scientific models in 3 dimensions, which would later be used in the teaching of the contents, helping the students' understanding";
- "To bring historical artifacts to life, for example (bifaces, navigational instruments, working tools...)."

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10. 3D Printing potential in the classroom

Regarding the tenth question, "When applied in the classroom, 3D Printing can…", most participants agreed that it can bring potential to the classroom:

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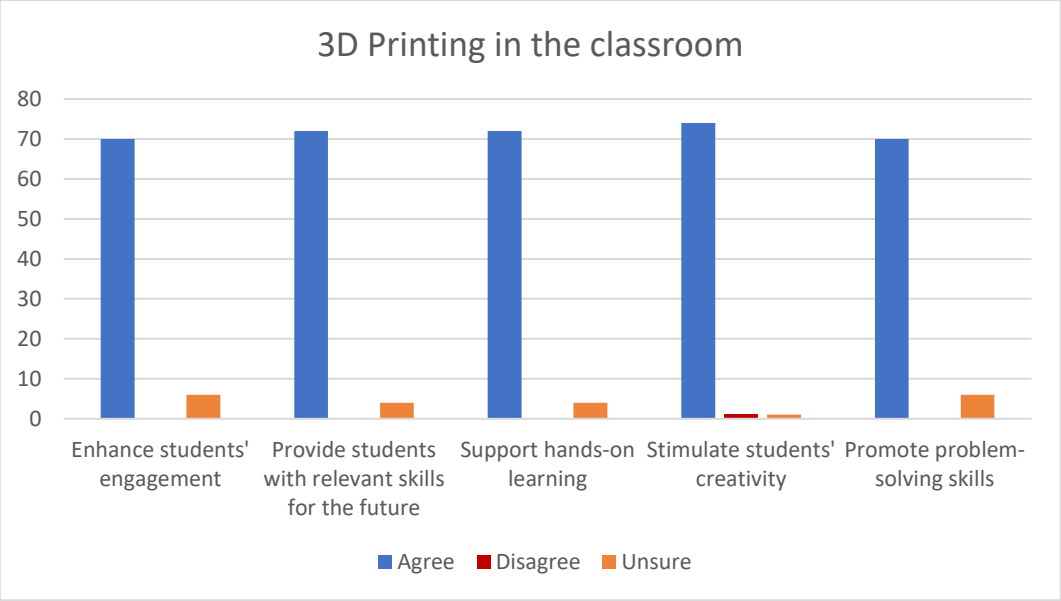
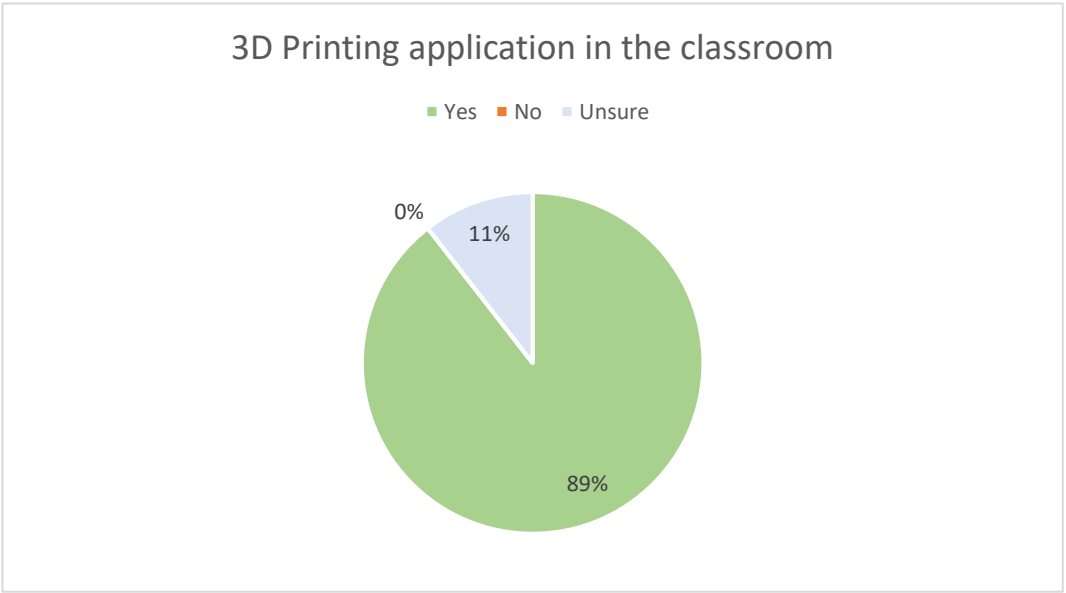


11. If you had the knowledge, the necessary support and equipment, would you be willing to apply 3D Printing aspects in the classroom?

Most respondents (68) agree that they would like to integrate 3D aspects in the classroom, should they have the right support. While no respondents answered "no", 8 said they are unsure:



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12. Additional comments

Finally, the twelfth and last question aimed at gathering feedback, suggestions about the training and experiences about the 3D Printing subject. Some of the answers include:

- "From my experience as a trainer I have been able to verify that 3D printing arouses a lot of interest and could have an infinite number of applications in teaching";
- "It is a training course with professional opportunities that must be instilled in all";
- "In my opinion, teachers should receive more training in STEAM subjects. I think that today, many teachers do not have any training in these subjects. In Spain, training continues in schools and institutes like 30 years ago. Innovative technologies are hardly used for the future. Knowledge of STEAM professions should be further promoted in students";
- "It seems to me very necessary to advance in knowledge of printing 3D";
- "The greatest expectation from VET students is about the development of practical training, rather than simulated/theoretical".

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