



HACK4Society: Digital Hackathon Training Events in the Service of E-Learning Solutions for the post Covid-19

Society



A SYNTHESIS OF NATIONAL COMPETENCIES REPORTS REGARDING THE IDENTIFICATION OF RECENT GAPS IN THE LEARNING EXPERIENCES IN THE DELIVERY OF E-LEARNING DUE TO COVID-19

LEADING ORGANIZATION: INNOVATION HIVE

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1. Introduction

The COVID-19 outbreak, which changed the global status quo, affected the total of the population, and especially those living in poverty, the elderly, individuals with disabilities, and youth, has affected all facets of the population and is especially harmful to those belonging to social groups in the most vulnerable circumstances. During the past years, social distancing has become increasingly important, and the majority of activities (such as education, employment, social life, etc.) has moved online. In general, the social and economic contributions of VET have been understudied and underappreciated up to this point, with VET institutions frequently being seen as simply providing skills rather than having a more extensive role in the innovation ecosystem. Even before COVID19, digitalization had a great potential for innovation-support in VET. The social crisis brought on by the COVID-19 pandemic may, in the medium and long terms, sharpen inequality, exclusion, discrimination, and global unemployment if it is not adequately handled through effective and to-the-point policy-making.

One of the major areas affected by the pandemic, was education. Schools, universities and training centers had to close and provide their services online. That abrupt change, found teachers and students poorly prepared, and with minimum time for reaction. HACK4Society's mission is to organize hackathon events with the goal of providing urgent bottom-up solutions to VET Professionals to support their online training delivery. The project also aims to improve the quality and inclusiveness of initial and continuing VET and ensure that all young and adult learners have equal access to high-quality VET trainings.

The first step towards that cause is to identify the recent gaps in the learning experiences in the delivery of e-learning due to COVID-19. That identification is a process that has to take place both ways, first, from the teachers' perspective, and continuing, from the students' experience. Moving towards that goal, a targeted methodology was developed, having as a final result two questionnaires intending to track the aftermath of both these target groups. The questionnaires were distributed via Google Forms, their dissemination was country-based, and their objective was to collect the quantitative and qualitative information of both VET teachers' and students' experience due to Covid pandemic. Furthermore, targeted focus groups with personal interviews were conducted in each participating country, to add credibility and personal character to the survey's findings.

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The participating countries were Cyprus, Germany, Greece and Italy, providing the survey with a European character and differentiation.

The final result, after the collection of the answers from the distributed questionnaires, and with the insights deriving from the focus groups interviews, is a synthesis of the national competencies reports, regarding the identification of the recent gaps in the learning experiences in the delivery of e-learning due to Covid-19, with quantitative and qualitative indicators and samples from all the partner countries.







2. Cyprus

Introduction:

Cyprus' response to the Covid-19 outbreak was immediate; the Government of Cyprus decided to suspend all in-schools operations in al public as well as private schools. Decisions were made for both general and VET educations, as there weren't any specific measures for VET education. Within a few days after school closure, online learning was adopted in all schools for all educational levels and for the additional supportive educational lessons undertaken in the afternoons. Specifically, teachers were recalled to schools to create their own school specific action plan for distance synchronous and asynchronous learning options. All teachers were working from home using and relying on online tools and platforms for the deliverables of their lessons. Their presence to school occurred only when necessary and according to government instructions for the safe operation of all public and private organizations and institutions.

The overall support of Cyprus to distance learning was achieved in several ways. Firstly, Cyprus implemented a distance synchronous education programme (through Microsoft Teams), where more than 110 000 teachers and learners gained access to the software and intensive online teachers. Any training courses required for the successful use of the specific digital platform were provided by the Pedagogical Institute of Cyprus, starting with upper secondary teachers. Also, networks of teachers were formed to provide peer assistance through the use of distance learning tools and learners were taught on how to use these tools based on their teachers' assistance. Lastly, supportive educational materials for learners were uploaded in the education ministry's website and on individual (public) school websites (European Centre for The Development of Vocational Training (Cedefop), 2022).







Methodological Outline:

The online survey analysis shows a total of 27 responders, representing VET educators and trainers and 10 responders, representing VET learners. In total Cyprus managed to reach 37 responses, that is more than half of the number expected to be reached per country, despite the kind reminders sent to VET educators and learners. Thus, CSI, being the only representative of Cyprus, reached the best possible results in regards to numbers.

Specifically, the consortium decided to develop two distinct questionnaires in order to allow participants reflect their reality and needs. Thus, one questionnaire was developed for VET learners and one for VET educators. Some of the questions included in both questionnaires were the same, such as the first questions that were demographical questions asking about age and gender. The rest of the questions were similar, as some amendments needed to be made in order to meet the needs of the specific target group. After the development of the questionnaires, the translation to each national language of each partner country took place. Thus, both questionnaires were disseminated in the national languages of each partner country.

The dissemination of the online questionnaires was done in different ways using emails, social mediaand the word of mouth. Follow up emails and kind reminders were also sent, in order to increase thenumber of responses. The time period (summer months) in combination with the target group (VET learners and educators) justified the low number of responses as the majority of the students and learners were on examination period.

The extraction of the results was done through the creation of graphs for each question, according to the responses given. The graphs created, help to understand different patterns in regards to the specific elements each question asks. These graphs as well as percentages are presented below in support of further analysis and explanations.

Complementary with the surveys distributed, each partner country conducted focus groups, in order to reach a total of 14-15 interviews. CSI, representing Cyprus, managed to conduct three focus groups with both VET educators and VET learners. Specifically, a total of 11 VET educators and learners were reached; 5 VET learners and 6 VET educators participated in the three focus groups organised. VET learners were between the ages of 18-27 and were mostly university students, and some are secondary education students. VET









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educators were between the ages of 25-45 and varied from primary educators, secondary educators/ high-school educators and university educators. As agreed, the questions of the online questionnaires were used in the focus groups, in order to keep questions simple and allow the participants to reflect further on the questions they believed they could elaborate further by sharing believes, opinions and experiences. This idea, allowed participants to start a discussion between them, agreeing and disagreeing while extracting different thematic areas that will be explained further in comparison with the results of the online questionnaires.







Results:

Summary of focus groups:

The questions asked to both VET learners and educators were the same, except two that were modified in accordance to the specific participants. An overall summary of the main results, commonalities and differences between participants will be highlighted.

VET learners:

Specifically, all VET educators stated that a hybrid version of teaching is preferred where a combination of both in presence and online teaching/schooling is adopted. The reasons behind this, is mainly the combination of time-availability and easier access to material. The fact that they could join the lesson from their homes as well as having all learning materials accessible on a single device seems to make VET learners to prefer the online type of teaching. However, the lack of socialising as well as being present in practical lessons (eg. maths, labs) had a major negative impact to VET learners. In regards to additional stress and workload, all VET students commonly referred to the theme of privacy, in regards to other students joining, taking photos, etc.

Regarding the devices and online platforms, VET educators did not express any difficulties they had to face, due to their familiarity of using such devices and online platforms. Specifically, they referred that itwas easy and straight forward to use the online platforms.

The unexperienced staff was the biggest challenge faced and thus the concern on whether knowledgecould be transferred the same way through online teaching.

In regards to digital skills, an overall comment of training should take place covering all digital skills delivered to educators in order to carry out an online lesson, as they could see that not all teachers were familiar with the use of online teaching; tools, platforms and devices.

Furthermore, when asked about what digital skills are needed to make the lesson more efficient, they referred to skills that will make a lesson more interesting and engaging; creativity in regards to contentand teaching material, multimedia and tools used.

Additionally, they identified that the learning community was missing and played a vital role in the learning experience. They also stated that more practical lesson the educational goals were not delivered up to a great extent whereas in more theoretical lessons the educational goals were delivered with success.

VET stated that their teachers overall responded positively to the online teaching, while acknowledging that greater efforts should have been placed by them as well as willingness for teachers. They expanded further









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on that, stating that it also depended on the individual teacher, as some teachers did not adapt their learning materials for online teaching as well as for students with educational needs

Lastly, they commonly stated that not the same learning outcomes can be achieved by attending a lesson online and/or physically as there is lack of physical interaction, that is greatly needed in any kind of lesson.

VET educators:

VET educators, expressed their preference on an in-presence teaching. The physical interaction is prevented through online teaching and the hybrid choice makes teaching harder due to the difficulty of combining two types of teaching, that include both technicalities and the fear of students losing their interest and thus not being concentrated, as explained.

In regards to stress and workload all VET educators stated that there was a lot of stress at the beginning as online teaching was a new way of teaching. VET teachers referred that online teaching did not allow them to be aware if their students were engaged, interested, and concentrated during their lesson. This could further cause difficulties in coordination, especially to students with special educational needs.

Thus, this had an overall impact on whether they were able to do their job properly and deliver the outcomes of their teaching. Some expressed that an additional workload was added due to their unfamiliarity of the correct usage of the online platforms they were using. This resulted in spending more time for selfteaching, searching for information and asking colleagues in order to expand their knowledge around technology and online-platform usage. Taking it a step further, this was justified as all VET educators stated that no official trainings were given in regards to online teaching and the online platforms they were using, resulting in self-teaching. Some VET teachers found this as a positive outcome, as they were forced to expand their knowledge and others didn't, as they would prefer to have a training as this would have improves the quality of their online teaching.

The biggest challenges faced by VET educators varied between each educator. Some of the answers included that some VET teachers did not have their material in a digital form, making teaching online even more difficult. As a result, a lot of them had to adjust and adopt to the new way of teaching by spending time to make their content in an online format, meaning that they had to purchase relevant tools to help with their online teaching. Such purchases were personal expenses and were not covered or fully covered by their employer. Also, some stated that despite the technological and practical difficulties, they were worried if they would be able to deliver their lesson in a way that would give the same level of education in comparison to in-presence teaching. Reference to participation was also noted, as it was a challenge on how to make students participate. Another challenge stated was the social aspect of the online teaching, as there was no



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physical interaction between them and their students. A common challenge stated, is that VET educators had to put an extra effort for the digitalization of their lesson in order to minimize the rest of the challenges stated above.

VET teachers referred that digital skills that would allow them to include (more) audiovisual content would have further impacted positively their teaching experience, as creativity and the ability and adaptability to create a well-developed digital content would have made their lessons more efficient effective. This could make their students more engaged, interested and concentrated to their online teaching.

Some VET teachers stated that they were not happy with their online-teaching performance and other stated that they were happy with what they have achieved taking into consideration the lack of training, their adaptability to self-learning and transformation of material in a digital form.

Furthermore, similarly to VET students, they all stated that not the same learning outcomes can be achieved through an online lesson and/or physically as physical interaction is needed in all types of lessons for all ages and levels of education.

Lastly, that the lack of training was a positive thing for some VET teachers as they were able to technologically update the quality of their lessons by self-teaching and self-learning.

Overall, differences in responses were understood between VET learners and VET educators. Interestingly, differences in responses were not only noted between VET learners and educators, but between VET educators themselves. The differences observed were based on the experiences each VET educator had that were all based on the type of lesson taught, the age-group of students the VET educator was teaching as well as the level of education taught.

The common themes identified from both VET educators and VET learners include that each experience of online teaching depends on the lesson taught, the age-group of students the VET educator was teaching as well as the level of education taught. A lot of reference was also identified in regards to prior training in order to tackle any other technological challenges could arise and would have helped VET educators to be familiar with the relevant technological usage. Trainings could also impact the themes of concentration and engagement that were also commonly identified from VET educators and learners.







Online survey analysis-for VET learners:

The online survey analysis shows a total of **10** responses, coming from VET learners and students, where **80%** of these responses represent participants under the age of 30 and **10%** represent the age range of 31-40 and **10%** of these responses represent participants over 50. Out of the 10 responses received, themajority was women, represented by the percentage of **80%**, whereas the rest, **20%**, were male. No respondents chose the rest of the choices; non-binary, prefer not to answer.

Following the introductory questions, questions about teaching and learning methods were asked:

- 3. Which were the teaching methods that your teacher used to deliver the lesson?
- 4. How do you prefer to take your lessons?

παραδώσει το μάθημα;

- 5. Do you have the possibility of recording your lesson, is the delivery asynchronous, so that you can attend it at any time?
- 6. Did you use any online educational application or tool? If yes, indicate which?

3. Ποιες ήταν οι μέθοδοι διδασκαλίας που χρησιμοποίησε ο δάσκαλός σας για να

7. Did you experience any additional stress or workload due to the online delivery of the lesson?



The results show that all learners chose the use of lectures in their lessons, reaching the percentage of**100%**. Participants have also chosen the use of videos (**70%**), the use of group activities (**50%**) and the use of interactive games (**20%**).

The results show that the most common method used in their lessons was the use of lectures, as all







participants marked that option. Creative videos, such as the use of videos and interactive games werealso used during VET learners' lessons. Only 2 participants have selected the option interactive games.Overall, all options were selected, showing the variation of methods used in order to make students more engaged with their teachers' online teaching.

Πώς προτιμάτε να παρακολουθείτε τα μαθήματά σας;



The following question referred to their preference in regards to lesson attendance. Most of the respondents, 40%, chose the 'in presence', 30% of the participants chose the 'hybrid' way of participating and 30% have chosen the 'online way' of participating in their lessons. Even if the 'in presence' option received the most answers, there is only 10% difference with the rest of the answers. The very similar results show that VET students prefer all three ways of teaching, as there is not a huge percentage-difference between the results as presented in the pie chart.



Έχετε τη δυνατότητα να καταγράψετε το μάθημά σας, είναι η παράδοση





Question number 5 asked specifically about the recording of the lessons in order for them to have theoption to revisit the lesson delivered. Most of the students, **60%**, chose the 'YES' option; that their lessons were recorded. The rest of the answers, **40%**, were 'NO'; that their lessons were not recorded.Again, not a huge difference is recorded, showing that this may be something that depends on the individual teacher.

6α. Χρησιμοποιήσατε κάποια διαδικτυακή εκπαιδευτική εφαρμογή ή εργαλείο, και αν ναι, αναφέρετε ποια.











Question 6 was split into two in order to be easier for participants to answer the question. The main question was whether VET learners use online educational applications or tools. The majority of responses were positive. Specifically, VET learners who responded positively were **60%**, while the rest, **40%**, marked the 'no' option. Again, not a huge percentage difference is recorded, showing that there were VET students who did not use any online educational application or tool, thus not enhancing further their digital skills. From those who responded with a 'yes', they were asked in an open-ended question to include the online educational application or tool used. The most common answers recorded were teams (**33.3%**) and blackboard (**50%**).



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 Αντιμετωπίσατε πρόσθετο άγχος ή φόρτο εργασίας λόγω της διαδικτυακής διεξαγωγής του μαθήματος;





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For the last question of this section, participants were asked if they have experienced any additional stress or workload due to the online delivery of the lesson. Most of the responses to this question were positive (60%), showing that they have experienced extra stress and/or workload online learning has caused. This is justified, as the online way of teaching was something new for most of the VET teachers and learners. The rest of the answers, 40%, were negative. Again, there is not a lot of percentage difference (20%); this might explain the age group of the participants and thus their familiarity with technology.

Following the questions about teaching and learning methods, questions regarding the identification of digital skills were asked:

- 8. Which device did you use for the online lessons?
- 9. Which was the online platform (e.g. Zoom, Cisco WebEx) that you use for the delivery of the online courses?
- 10. How easy was it to start attending online lessons through these devices? Please explain your answer.
- 11. How easy was it to start attending online lessons through these platforms. Please explain your answer.
- 12. Mention the challenges that you consider that your country faces in respect to the digitalization of VET.
- 13. What digital skills do you need in a vocational course?
- 14. Which digital skills do you think will make your lessons more efficient and effective?



8. Ποια συσκευή χρησιμοποιήσατε για τα διαδικτυακά μαθήματα;





Question 8 referred to the type of devices VET learners were using for their participation in their online lessons. Almost all the participants selected the use of a computer, reaching 90%, 40% of the participants used tablet and 40% of the participants used their telephone. The results show that VET students used a combination of devices for their online learning, showing the technological familiarity to different devices.

9. Ποια ήταν η διαδικτυακή πλατφόρμα (π.χ. Zoom, Cisco WebEx) που χρησιμοποιήσατε για την παράδοση των διαδικτυακών μαθημάτων;



Question 9 was an open-ended question where participants had to indicate the online platform used to participate in the lessons. The most common answer was Zoom (60%). The second most common answer was Teams (30%). The common answers show the usefulness as well as familiarity and thus convenience of the tool used. Interestingly, the results contradict with question 6b that was about indicating the online educational application used, as the most common answer was teams. This may show the familiarity of VET students with different online devices.









10α. Πόσο εύκολο ήταν να ξεκινήσετε τη διδασκαλία των διαδικτυακών μαθημάτων μέσω αυτών των συσκευών;

Question 10 was again split into two questions to make it easier for participants to respond. This question asked how easy it was to start attending the online lessons through these <u>devices</u> (1-very easy, 5-very difficult). Most of the respondents marked 2-easy, reaching **40%**, while **30%** of the participants marked the question with 1. The rest of the answers were split between participants, all marked by 1 participant, reaching **10%** each score (3,4,5). Even if there were different responses, the majority of the participants reflected an 'easy' procedure, again showing the familiarity with such devices, tools and materials. Further justifications can be found in the table below:

The table presents the answers to question 10b. where participants were asked to explain their answerin regards to question 10. Common answers were all summarized below.

Easy to adapt as already using the equipment	
Already use of digital tools	
Difficult adaptation	
Use technology on a daily basis	
A bit difficult at the beginning, but then I was fine	
line	









11α. Πόσο εύκολο ήταν να αρχίσετε να παρακολουθείτε διαδικτυακά μαθήματα μέσω αυτών των πλατφορμών;

Similarly, to question 10, question 11 asked how easy it was to start attending online lessons through these <u>platforms</u>. Question 11 was again split into two questions to make it easier for participants to respond (1-very easy, 5-very difficult). Again, most of the respondents marked 2-easy, reaching **40%**, while **60%** of the participants marked the question by 1, 3 and 4 the question, where each score reached 20% of responses. No responses were given to option number 5 (very difficult). Even if there were different responses, the majority of the participants reflected an 'easy' procedure, again showing the familiarity with such platforms and materials. Further justifications can be found in the table below:

The table presents the answers to question 11b. where participants were asked to explain their answerin regards to question 11. Common answers were all summarized below.

If difficulties faced, I could ask for help
Easy platform to use
Lack of concentration
Already use and access of platform
A lot of time in front of pc and platform







12. Αναφέρετε τις τρεις μεγαλύτερες προκλήσεις που θεωρείτε ότι αντιμετωπίζει η χώρα σας σε σχέση με την ψηφιοποίηση της ΕΕΚ.



Question 12 asked participants to mention the challenges that their country (Cyprus) faces in respect to the digitalization of VET. The majority of participants referred to the 'lack of flexibility to transform the educational material to digital form' reaching **70%** and 'digital competencies', reaching again **70%**. The second most popular choice was 'experienced staff' and 'bad internet connection' reaching **50%** each.



13. Ποιες ψηφιακές δεξιότητες χρειάζονται σε ένα επαγγελματικό μάθημα;

Question 13 focuses on the skills required in a vocational course. Almost all the participants marked thefirst and the second option regarding 'computer and data knowledge' and the 'creation of digital content', reaching **90%** each.









Ποιες ψηφιακές δεξιότητες πιστεύετε ότι θα κάνουν τα μαθήματά σας πιο αποδοτικά και αποτελεσματικά;

The last question of this section, question number 14, regards the digital skills that make a lesson more efficient and effective. The majority of respondents marked the first option 'competences of learning simulations', reaching 80%. The second highest responses which received the same number of responses, included: 'creation and visualization of content' and the 'technologies of presentation and multimedia', both reaching the percentage of 70% each.

Following the questions about the identification of digital skills, questions regarding the challenges in student's engagement was asked:

15. Do you feel that the basic principles of the learning material are transmitted to you properly in a virtual mode?

16. Do you believe that teachers responded positively to the challenges, and were able to attend the class efficiently?

17. Do you believe that one can achieve the same learning outcomes, attending a lesson physically, and/or virtually?

18. What did you enjoy most about the delivery of your lesson virtually?

19. Is there any subject not covered by the aforementioned questions, or would you like to comment on something further?













15α. Θεωρείτε ότι οι βασικές αρχές του μαθησιακού υλικού σας, μεταδίδονται σωστά σε μια εικονική λειτουργία;

Question 15 focused on whether the basic principles of the learning material were transmitted properly to the students (1-Totally disagree / 5-Totally agree). Half of the respondents marked this question witha 3-neither agree or disagree, reaching 50%, while the rest of the respondents marked this question with a 4-agree (30%) and a 5-totally agree. (20%). Further justifications can be found in the table below:

The table presents the answers to question 15b. where participants were asked to explain their answer in regards to question 15. Common answers were all summarized below.

More information required at some lessons
No tools to an interactive lesson
No learning community can be formed through online learning
Support/ technical support from teachers
Further explanations were given for each lesson from the
teachers













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 Πιστεύετε ότι οι εκπαιδευτικοί ανταποκρίθηκαν θετικά στις προκλήσεις και ήταν σε θέση να παραδώσουν το μάθημα αποτελεσματικά;



Question 16 focused on whether VET students believe that teachers responded to the challenges of online teaching. The majority of the responses were positive, reaching the percentage of 80% while the rest of the 20% believed the opposite.



 Πιστεύετε ότι μπορεί κανείς να επιτύχει τα ίδια μαθησιακά αποτελέσματα, παρακολουθώντας ένα μάθημα δια ζώσης ή/και εικονικά;







Question 17 focused on whether one could achieve the same learning outcomes when attending the lesson physically and/or virtually (1-Totally disagree / 5-Totally agree). The majority of the responses, reaching 40%, marked this question with a 3-neither agree or disagree. The rest of the choices were marked by the same number of participants, reaching 20% for each choice. No answers were given for option number 1-totally disagree, showing that it could be feasible to achieve the same learning outcomes through online teaching.

The last two questions were open-ended questions, and the responses are summarized in the tables below:

Question 18 asked what VET learners enjoyed the most about the delivery of their lesson virtually. A variation of responses was given including:

More self-learning
Staying home
Comfort and safety of own space
Flexibility in regards of time and space

The last question, Question 19 gave the opportunity to participants to state and reflect on any other subject not covered by the aforementioned questions, or comment on something further. Most of the responses stated that there was nothing else to comment on. Some responses stated:

• Teachers were not familiar with the software or couldn't solve technical problems







Online survey analysis-for VET educators:

The online survey analysis shows a total of **27** responses, coming from VET educators, trainers and teachers, where **37%** of these responses represent participants over the age of 50, **29.6%** represent theage range of 41-50, **18.5%** represent the age range of 31-40 and **14.8%** represent the age range of participants under the age of 30. Out of these 27 participants, the majority were women, represented by the percentage of **85.2%**, whereas the rest, **14.8%** were male. No respondents chose the rest of the choices; non-binary, prefer not to answer.

Following the introductory questions, questions about teaching and learning methods were asked:

- 3. Which were the teaching methods that your teacher used to deliver the lesson?
- 4. How do you prefer to deliver your lessons?
- 5. Do you have the possibility of recording your lesson, is the delivery asynchronous, so that you can attend it at any time?
- 6. Did you use any online educational application or tool? If yes, indicate which?
- 7. Did you experience any additional stress or workload due to the online delivery of the lesson?



 Ποιες ήταν οι μέθοδοι διδασκαλίας που χρησιμοποιήσατε για να παραδώσετε το μάθημα;

The results show that almost all participants use lectures to deliver their lessons, reaching the percentage of **88.9%**. The rest of the answers; use of video, use of interactive games and use of group activities were on the same level reaching the percentage range of **63-74%**. Specifically, 20 participants







marked the use of video games (**74.1%**), 17 participants marked the use of interactive games (**63%**), and19 participants marked the use of interactive games (**70.4%**).

The results show that the most common method for lesson delivery is the use of lectures. Creative wayssuch as the use of video games, interactive games and group activities were also used, explaining that such methods of learning may be used complementary to the lectures in order engage the students through the online teaching. This can be understood from the overall high percentages of all methods of teaching used.



The following question asked about their preference in regards to teaching their lessons. Most of the respondents, 77.8%, chose the 'in presence' method, that is the method used before the pandemic of Covid-19. Thus, this shows that VET teachers prefer the in-presence teaching, that is the way they are familiar

teaching. Interestingly, some participants, 14.8%, chose the hybrid way of teaching.

This allow us to understand that some VET teachers appreciated the online lessons and a combination of the two; in person and online, could be an ideal, more modernized way of teaching.







Question number 5 asked specifically about the recording of the lessons in order for students to have the option to revisit the lesson delivered. Interestingly, responses were almost 50-50, with the higherpercentage being the 'No' as answer; VET teachers not providing recording and thus the option for students to revisit the lesson delivered. This percentage reached **51.9%** while the ones who recorded their lesson reached **48.1%**. This may show that such option depends on the individual teacher for providing or not providing the option for recording.

6α. Χρησιμοποιήσατε κάποια διαδικτυακή εκπαιδευτική εφαρμογή ή εργαλείο;



6β. Αν ναι, αναφέρετε ποια:









Question 6 was split into two in order to be easier for participants to answer the question. The main question was whether VET professionals use online educational application or tool. The majority of theresponses were positive, showing that most responders despite the online lectures use other online educational application or tools to enrich their online teaching as well as make it easier while taking advantage of the technological development. The responders replying with a 'yes' reached the **81.5%** while the responders replying with a 'no' reached the **18.5%**.

From those who responded with a 'yes', they were asked in an open-ended question to include theonline educational application or tool used. There were a lot of different responses, while the mostcommon ones reaching **18.2%** and **9.1%** respectively, were Teams and Blackboard.



 Αντιμετωπίσατε πρόσθετο άγχος ή φόρτο εργασίας λόγω της διαδικτυακής διεξαγωγής του μαθήματος;

For the last question of this section, participants were asked if they have experienced any additional stress or workload due to the online delivery of the lesson. Most of the responses to this question were positive (59.3%), showing that VET educators have experienced additional stress and workload due to the online delivery of the lesson. This is justified, as the online way of teaching was something new for most of the VET teachers and learners, as face-to-face teaching was the way of teaching before the pandemic. Hence, more time was needed to familiarize themselves with the online material and tools causing further stress due to the unfamiliarity of this method of teaching and the unknown way of teaching. The number of participants who replied with a 'no', was also high (40.7%) explaining that VET educators were already familiar with the online tools that needed to be used in order to deliver their lessons.





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Following the questions about teaching and learning methods, questions regarding the identification of digital skills were asked:

8. Which device did you use for the online lessons?

9. Which was the online platform (e.g., Zoom, Cisco WebEx) that you use for the delivery of the online courses?

10. How easy was it to start attending online lessons through these devices? Please explain your answer.

- 11. How easy was it to start attending online lessons through these platforms. Please explain your answer.
- 12. Mention the challenges that you consider that your country faces in respect to the digitalization of VET.
- 13. What digital skills do you need in a vocational course?
- 14. Which digital skills do you think will make your lessons more efficient and effective?



8. Ποια συσκευή χρησιμοποιήσατε για τα διαδικτυακά μαθήματα;

Question 8 referred to the type of devices VET professionals were using for their online teaching. All of the participants selected the 1st choice, that was computer, thus reaching 100% and only 6 in total selected the other two choices; tablet (14.8%)-4 participants, phone (7.4%)-2 participants, making a total of 22.2% of the responses. The responses show that since all teaching was converted to an online teaching, the most used and preferred tool that was used was the computer, that also shows the participants' familiarity with this specific tool.









9. Ποια ήταν η διαδικτυακή πλατφόρμα (π.χ. Zoom, Cisco WebEx) που χρησιμοποιήσατε για την παράδοση των διαδικτυακών μαθημάτων;

Question 9 was an open-ended question where participants had to indicate the online platform used to deliver their lessons. The most common answers were 'teams' reaching in total the percentage of **48.1%**, reaching almost 50%, half of the respondents, as well as 'zoom' reaching in total the percentage of **33.3%**. The common answers show the usefulness as well as familiarity and thus convenience of the tool used. Interestingly, this could be also understood as in the previous open-ended question, question 6b that was about indicating the online educational application used, the most common answer was again teams, justifying that VET professionals use the same tool/platform for the delivery for their onlinelessons as well as for their online education application.

10α. Πόσο εύκολο ήταν να ξεκινήσετε τη διδασκαλία των διαδικτυακών μαθημάτων μέσω αυτών των συσκευών;









Question 10 was again split into two questions to make it easier for participants to respond. This question asked how easy it was to start attending the online lessons through these <u>devices</u> (1-very easy, 5-very difficult). Most of the respondents (13) marked 1-very easy, reaching **48.1%** and only 1 participant marked 5-very difficult, making the **3.7%** of the responses. Even if there are different responses, the majority of the participants reflected a 'very easy' procedure, showing the familiarity with such devices. Further justifications can be found in the table below:

The table presents the answers to question 10b. where participants were asked to explain their answer in regards to question 10. For better understanding, the researcher has split the responses in two tables, distinguishing the positive answers (1-very easy, 2-easy) and the negative answers (4-difficult, 5-very difficult). There were common answers to both positive and negative responses, all summarized below.

Positive answers (1-very easy, 2-easy)
The procedure was easy
Did not face any difficulties
We were trained on the spot.
Already had and used the application
Very good knowledge of such devices
and applications
The use of tablet was really useful
Attended relevant training
Friendly means of teaching
Already had the equipment
Material was in an online format

Negative answers (4-difficult, 5-very difficult)	
Slow pc, no modern technology	
Familiarisation with online tools	
New things require time for adjustment for	
both students and teachers	







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11α. Πόσο εύκολο ήταν να ξεκινήσετε τη διδασκαλία διαδικτυακών μαθημάτων μέσω αυτών των πλατφορμών;

Similarly, to question 10, question 11 asked how easy it was to start attending online lessons through these <u>platforms</u>. Question 11 was again split into two questions to make it easier for participants to respond (1-very easy, 5-very difficult). Most of the respondents (9) marked 1-very easy, reaching **33.3%** and only 1 participant marked 5-very difficult, making the **3.7%** of the responses. Even if there were different responses, the majority of the participants reflected a 'very easy' procedure, again showing that teachers aimed to familiarize themselves with the usage of specific online platforms. Further justifications can be found in the table below;

The table presents the answers to question 11b. where participants were asked to explain their answerin regards to question 11. For better understanding, the researcher has split the responses in three tables, distinguishing the positive answers (1-very easy,2-easy) the neutral ones (3- not easy not difficult) as there were a number of participants who marked this question with a 3 and lastly, the negative answers (4-difficult, 5-very difficult). There were common answers to both positive and negative responses, all summarized below.

Positive answers (1-very easy, 2-easy)	
Friendly and easy to users	
IT support, thus not difficulties	
Easy procedure	
Knew how to use apps	
Found and attended relevant training	
Neutral answers (3- not easy not difficult)	
Some difficulty in regards if the students	
could hear me properly	
At the beginning it was difficult but then	

we were fine

We were not trained and needed to be used		
right away		
Difficult to familiarise ourselves with online		
platforms		
No prior knowledge, thus had to learn		
everything in a short period of time		
New for me and difficult to assess students		

Negative answers (4-difficult, 5-very difficult)











Difficulty in speakers' connection and share screen Easy, but **needed time for familiarization**

12. Αναφέρετε τις τρεις μεγαλύτερες προκλήσεις που θεωρείτε ότι αντιμετωπίζει η χώρα σας σε σχέση με την ψηφιοποίηση της ΕΕΚ.



Question 12 asked participants to mention the challenges that their country (Cyprus) faces in respect to the digitalization of VET. The majority of responses (15 participants) chose the third choice that was 'equipment' reaching **55.6%** of the responses. Thus, over half of the responders marked this choice as the main challenge to digitalization of VET. The lowest percentage was on 'bad internet connection', reaching **18.5%** as 5 participants chose this answer. The results show that the lack of equipment was the main challenge for most VET educators.



13. Ποιες ψηφιακές δεξιότητες χρειάζονται σε ένα επαγγελματικό μάθημα;





Question 13 focuses on the skills required in a vocational course. Almost all of the participants (24) marked the second option regarding the creation of digital content, reaching the percentage of **88.9%**, while the second most preferred option, with 23 choices, was the first option; computer and data knowledge, reaching the percentage of **85.2.** Interestingly, the most important skill needed in online teaching is the good knowledge on what regards the creating of online content in order to be appealing, engaging and motivating to the students.



 Ποιες ψηφιακές δεξιότητες πιστεύετε ότι θα κάνουν τα μαθήματά σας πιο αποδοτικά και αποτελεσματικά;

The last question of this section, question number 14, regards the digital skills that make a lesson more efficient and effective. Two answers received the same number of responses; creation and visualization of content and the technologies of presentation and multimedia, both reaching 20 responses and thus the percentage of **74.1%**. The second highest response, receiving a percentage of **44.4%**, is the option 'competences of learning simulations. Interestingly, VET educators and teachers believe that the most important skills in regards to online learning.

Similarly, to question number 13, we can see that the skills required for the content creation and visualization of content are one of the most important ones, since it is the outcome directly affecting their audience.

Following the questions about the identification of digital skills, questions regarding the challenges in student's engagement was asked:

- 8. Do you believe that you have achieved your educational goals through these new methods?
- 9. Do you believe that students responded positively to the challenges, and were able to attend the

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- 10. Do you believe that one can achieve the same learning outcomes, attending a lesson physically, and/or virtually?
- 11. What did you enjoy most about the delivery of your lesson virtually?
- 12. Is there any subject not covered by the aforementioned questions, or would you like to comment on something further?

15. Πιστεύετε ότι έχετε επιτύχει τους εκπαιδευτικούς σας στόχους μέσω αυτών των νέων μεθόδων;



Question 15 focused on whether VET teachers achieved their educational goals through the methods mentioned above (1-totally Disagree / 5-Totally agree). Most of the respondents (15) marked this question with a four-agree, reaching 55.6% showing that VET teachers are overall happy with their achievements in regards to their educational goals through the pandemic and the new ways of teaching the they need to adapt to. Thus, this shows that they recognized that they did the best they could in order to meet the educational needs and aims through the online way of teaching. No participant marked the question with a 1-totally disagree, which is an extremely positive result.







 Πιστεύετε ότι οι μαθητές ανταποκρίθηκαν θετικά στις προκλήσεις και ήταν σε θέση να παρακολουθήσουν αποτελεσματικά το μάθημα;



Question 16 focused on whether VET teachers believe that students responded to the challenges and were able to attend the class efficiently. The majority of the responses were positive, reaching the percentage of 88.9% while the rest of the 11.1% believed the opposite. Again, we can see that despite the new of teaching, VET educators were happy with their students' responses to their online classes and attended the class efficiently.

 Πιστεύετε ότι μπορεί κανείς να επιτύχει τα ίδια μαθησιακά αποτελέσματα, παρακολουθώντας ένα μάθημα δια ζώσης ή/και εικονικά;









Question 17 focused on whether one could achieve the same learning outcomes when attending the lesson physically and/or virtually? (1-Totally disagree / 5-Totally agree). According to the graph, we could see that answers were split having very similar results as answers varied between **25.9%-22.2%**. Specifically, most of the responses (7 participants) marked the question with a 2-disagree, reaching **25.9%**, 5 participants marked the question with a 5-totally agree, reaching **22.2%**, and the same results were received for 4-agree. Three participants marked the question with a 1-toatlly disagree, reaching **11.1%** and 5 respondents marked the question with a 3-neither agree or disagree, reaching **18.5%**.

The last two questions were open-ended questions, and the responses are summarized in the tablesbelow:

Question 18 asked what VET educators enjoyed the most about the delivery of their lesson virtually. Avariation of responses was given including:

Option of recording the lesson
Convenience
Students' participation
Flexibility of lesson through the use of technology
Students not getting tired
Quiet
Students being comfortable in regards to communication through the use of technology
Easy, no transport-not having to be physically there
Students who missed the lesson had the chance to join in
The use of online tools and games
More time to spend on the actual lesson
Easy use of online platforms and tools
Availability to note, hear and see the opinion of all students
Teach and taught from anywhere
Fast navigation between platforms
Chance for not-so engaging students to participate

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The last question, Question 19 gave the opportunity to participants to state and reflect on any other subject not covered by the aforementioned questions, or comment on something further. Most of the responses stated that there was nothing else to comment on. Some responses stated:

- Difficult to record the responses of the students in different activities. Face-to-face teaching
 allows the direct interaction and communication with the students-eg body language and facial
 expressions that allow you to understand what things they like and what not.
- Purchase and subscription to different online tools
- The best way of teaching interactive course is through physical presence
- Behavior of students; not being mature enough in order to follow the online lesson with seriousness
- The skills of VET teachers and educators of creating interactive activities methodologically and pedagogically effective.













Discussion:

Comparing all results together (VET learners focus groups, VET educators focus groups, VET learners' online surveys, VET educators' online surveys) we can draw some conclusions:

Most of the VET teachers prefer the face-to-face teaching, as also discussed in the focus group, since allVET educators stated their preference of an 'in presence' way of teaching. VET students prefer all ways as presented in the results of the surveys, whereas in the focus group they all agreed into a hybrid way of attendance.

The results of both VET learners and VET educators in question number 5, referring to the option of recording, show that the option of recording depends on the individual, the policies of their schools/universities, the type of lesson as well as the level of education taught.

The variation of answers recorded in regards to the online platforms used, show both VET teachers' andeducators' willingness to adopt to these changes and further enhance their digital and technological skills, while trying to make their teaching/learning easier. In both groups of participants, the most common educational online platform used was Teams and Blackboard.

Both VET educators and VET learners replied that extra stress and/or workload was added during the online way of teaching; Stress for VET educators was added because of the new way of teaching and forVET students regarded their privacy. The different reasons might explain the already technological and digital skills developed in VET students, thus the stress added had to do with privacy issues rather than technological usages.

Both VET educators and learners seemed familiar both with the device and platform they were using. However, some VET educators struggled to familiarize themselves with the platform, especially at the beginning, as also noted in the focus groups. This again may depend on differences in age and overall exposure and familiarization with technological tools. Also, even if the graph, representing the results of VET learners for the specific question, shows that it was easy to use the specific tool, the reasons students refer to, reflect more negative responses, as lack of concentration was also mentioned. Similarly, this was one of the main themes VET educators identified in their focus groups.

Interestingly, for the challenges faced, VET educators referred a lot to the 'lack of flexibility to transform **t**e educational material to digital form' and the 'digital competencies' needed to deliver an









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online lesson, both identified in their focus groups discussions and the results of the online questionnaires.

This contradicts to the responses of VET educator, as the complete opposite was mentioned; the most common responses identified in both the focus groups and the online surveys was the access to 'equipment' and their 'effort put to digitalize their lessons'.

The majority of both VET educators and learners stated that the digital skills needed in a vocational course are computer and data knowledge and the creation of digital content. Similarly, both VET educators and learners referred to the creation and visualization of content, the technologies of presentation and multimedia and competences of learning simulations as important skills that can make a lesson more efficient and effective.

Regarding the achievement of educational needs and the proper transmission of the basic transmission of the learning material through online teaching, VET participants all agreed that not the same learning outcomes can be achieved through online learning even if VET educators and students responded more positively in the online questionnaire. The justification to these differences depends on the lesson taught/learned, as expressed in the focus groups

Overall, as seen from the extra comments stated as well, the unfamiliarity of teachers with the technological usage at a great extent, was a major point noted in both focus groups and online surveys, expressed from both VET educators and learners. Taking it a step further, we can understand that this was due to the self-directed learning and teaching, as teachers had to develop their digital skills individually, as no formal trainings were given to them, as VET educators expressed.









Conclusion:

Concluding, according to the empirical research and online survey, Cyprus is currently absent from a digital education, due to teachers' unfamiliarity with digital development, absence of relevant training and the introduction to self-teaching methods, as understood during the outbreak of Covid-19 and the transition to online teaching. The country lacks knowledge and training, as to effectively introduce and fully implement the full use of technologies, through digitalized tools and trainings that will further develop the digital skills of teachers, in order to be able to help in the development of their students' digital skills, that are of great importance in the field of VET education. The NRRP strategies are essential to be introduced in all VET educational institutions of the country, including schools, collages, schools and after school supportive lessons with effective introduction and implementation. Further on that, more explicit strategies should be proposed and included in relevant policies, for targeted training for the development of specific and general digital skills of VET teachers.

Cyprus must introduce policies around the digital skills development of teachers as well as to develop aguidebook in order to be used from teachers and educational institutions. The introduction and implementation of such policies in the country should be developed through adequate education and training, while using a variety on digital tools in order for teachers to get familiar with the technologicalusage on a daily basis at a great extent.

With the adequate effort put in an effective development of the digital skills of VET teachers through education and training, while implementing NRRP, Cyprus can achieve digital transformation, further modernizing national economy while getting to the core of the digital economy. Such achievement will further ensure employability to youth, tackling the rise of unemployment, particularly after covid-19. The small size country is not a burden. On the contrary, it can used as a competitive advantage, as it will provide easy and fast digital transformation which can further ensure greater employment opportunities nationally as well as internationally.







3. Germany

Introduction

Description of the project

The HACK4Society project introduces a bottom-up approach and provide VET Professional and Learners the floor to propose e-learning modules, training methodologies and techniques, that will create a better learning experience, creating a better e-learning environment.

This is realized through hackathon events and the preparation of Open Educational Resources (OERs). Hack4Society will prepare 15 e-learning Trainings Modules, that will be incorporated in the operation of EVBB (Major European VET Umbrella Organization), offering them to all VET providers across the EU, especially targeting the smaller institutions.

Hack4Society is meant for:

- VET providers, particularly the smaller ones (regional or local level) who are going to have access to state of the art and tailored e-training modules, that they would otherwise not be able to develop.
- VET teachers and trainers who are going to acquire better digital competences. VET Tutors and career counsellors, who will have access to ready to use software and e-modules in the form of OERs.
- VET learners who are going to have a better learning experience in an e-environment.

Objectives of the project

- 1. Reinforce the ability of VET providers to provide high quality, inclusive digital education.
- Provide new upskilling OER/15 e-learning Trainings Modules for VET professionals, that are going to be incorporated in the operation of the EVBB, offering them to all VET providers across the EU, targeting the smaller institutions.
- 3. Building capacity through Bottom-Up approaches based on the hackathon Events organized during the project implementation period.

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- 4. Develop high quality digital content, promoting innovative methods and tools for e-teaching and e-learning for the members of EVBB and available for all
- 5. Promote and deliver networking opportunities among VET providers, achieved through the participation of EVBB.
- 6. Development of tailor-made solutions adaptable at a Regional/Local level.

Purpose of the study

The purpose of this study is to identify the gaps in the learning experiences of VET education in the delivering of e-learning due to Covid-19, the existing digital skills that VET teachers/trainers acquire, the ways that VET teachers and trainers adapt to both anticipated and unanticipated changes, the policies related to curricula, occupational and educational standards, qualifications, programs, learning outcomes that VET teachers and trainers should possess, the thematic areas in which teachers/trainers need to be trained to deliver high quality teaching activities, the current state of VET teachers/trainers training in respect of the key components of DigiComp 2.0, the technical specifications of the Hackathon events, and the crucial components of the Hackathon materials.

Methods

The skills mapping to identify the key components of digital competence in terms of the knowledge, skills, qualifications, experiences and attitudes needed to be enhanced and supported from VET teachers and trainers in virtual classes and e-learning was identified through:

1. the implementation of 2 focus groups in each partner country with representatives of the ICT industry and educational institutions with specialization in technology, innovation and digital areas to get their inputs on the digital skills needed.

2. Development of interview questionnaires for VET teachers/trainers and VET students/learners.

In this context, the desk and field research were conducted in accordance to the following needs investigation:

• Digital skills and competencies needed











- Current knowledge
- Experience and qualification
- Attitude to adapt to digitization
- How do you perceive digitization to manifest in your work?
- To what extent do you think it will have an impact on ...?
- Key attitudes and behaviors displayed?
- Main learning media
- Main training areas to be developed
- What do you think are the main barriers for moving to a digital platform?
- Soft skills
- Social skills, capability of transmitting knowledge using digital tools
- Psychology factors, cause of anxiety, lack of physical connection
- Technical or Professional/ Experience-based skills
- What is the current status and how urgent is the need according to the VET teacher and trainers?
- Training provisions
- Teacher centric? Student centric?
- Innovation and critical thinking capabilities...
- Digitally enriched curriculum
- Digital designing of educational programs
- How to support, stimulate and empower the VET teachers and trainers
- Need for adaptation
- Efficiency and accessibility through digitization
- Subject specific competencies; Communication competencies; Process related competencies

<u>Results</u>

Concerning the survey that was carried out, EVBB was in charge of disseminating two separate questionnaires: one for students and one for teachers. Both of these questionnaires were developed by Innovation Hive with contributions from members of the consortium. Both surveys were translated into German so that it would be simpler for respondents in Germany to communicate their thoughts and feelings. For the purpose of distribution, the questions have been converted into Google Forms.











The EVBB has made use of the extensive contact information it has collected on its German members in order to facilitate the distribution of questionnaires (VET Providers, HE Universities, etc.). We were able to collect the necessary information to carry out our research from a total of 38 vocational education and training (VET) students and 24 VET instructors who agreed to participate in our study.

Analyses both quantitative and qualitative were carried out on the results of the study. Quantitatively, EVBB has evaluated the findings of the closed-ended questions and, when appropriate, numerous open-ended questions, and then transformed the results of these analyses into visual outcomes. EVBB has conducted a qualitative analysis of the responses to the remaining open-ended questions as well as selected participant insights.

When it came to the discussion (also known as a focus group), the participants were asked the same questions as on the questionnaire. In addition, ad hoc questions were asked in an effort to gain a deeper comprehension of how the transition to digital learning will affect the educational system.

The feedback received from VET professors and other staff members was analysed and considered in the subsequent discussion and conclusions.

VET teachers/trainers' questionnaires

The results of the VET teachers/trainers participating in the research, they are presented as follows:

Demographical data

What is your age?

50 percent of teachers who replied to the study are less than 40 years old, while the remaining 50 percent are older than 40 years (A perfect 50/50).











1 - What is your age?

24 responses



What is your gender?

Teachers: Women represent 54.2%, which is a narrow majority compared to men (45.8%).



Which were the teaching methods that your teacher used to deliver the lesson?

Teachers: "Videos" (95.8%) and "Lectures" (62.5%), followed closely by "Group activities" (62.5%), were cited as the most often employed modalities. Only about 37.5% of the teachers used "interactive games."







3 - Which were the teaching methods that you used to deliver the lesson? ²⁴ responses



How do you prefer to take your lessons?

Teachers: The majority choose purely "in presence" courses (58.3%), followed by blended courses (37.3%). Similarly, to students, very few teachers (4.2%) would like to provide their courses solely online (one out of twenty-four).

4 - How do you prefer to deliver your lessons? 24 responses



Do you provide the possibility of recording to your lesson, is the delivery asynchronous, so that students can attend it at any time?

Teachers: 62,5% of teachers don't give the possibility of recording their lessons.







5 - Are your online lessons recorded so that your students can attend them at any time? 24 responses



Did you use any online educational application or tool? If yes, indicate which:

"Yes" – 100%

Teachers mention a wider range of educational application and tools since they were the ones using and implementing them during their online courses:









- The most common apps used by teachers are included in "packs". The two most common packs were <u>Microsoft Office</u> 16 (incl. Teams (8) and Skype (1)) followed again by <u>Google Suite</u> 8 (incl. Google Classroom (4); Google Meet (1); YouTube (1)).
- Education content management such as <u>Google Classroom</u> (4), <u>Moodle</u> (1), <u>Mentimeter</u> (1), <u>Big</u> <u>Blue Button - BBB</u> (1), <u>Wordwall</u> (teaching resources creation platform - 1)
- Other MOOC online platform were also used depending on the subject taught: <u>Ellii.com</u> (1), <u>ANTON.APP</u> (1), <u>Finale NotePad</u> - Music Learning app (1),
- Other applications mentioned by teachers were <u>Kahoot</u> (interactive quizzes 4), <u>Jam board</u> (digital whiteboard 3), <u>quizzz</u> (interactive quizzes 3) <u>SurveyMonkey</u> (1) and <u>Padlet</u> (productivity software 1)
- Finally, teacher mentioned video-communication service apps such as Google Meet (1), Microsoft Teams (8) and Zoom (6).

Did you experience any additional stress or workload due to the online delivery of the lesson?

Teachers: A large majority of the teachers (83,3%) considered that online lessons incremented their workload and/or stress.

7 - Did you experience any additional stress or workload due to the online delivery of the lesson? ²⁴ responses



Identification of digital skills

Which device did you use for the online lessons?







Teachers: like students, used computers to deliver their online lessons (100%). Surprisingly, 12,5% of them

also used their phones.

8 - Which device did you use for the online lessons?

24 responses



How easy was it to start attending online lessons through these devices? (1- Very difficult / 5 - Very easy). Explain your answer.

Teachers: 70.9% of them had no – or very little - difficulty using their devices to follow their online lessons (54,2% easy, 16,7% very easy).

10 - How easy was it to start teaching online lessons through these devices? (1- Very Easy / 5 - Very Difficult) 24 responses



Which was the online platform (e.g. Zoom, Cisco WebEx) that you use for the delivery of the online courses?







The majority of Teachers mentioned that they held their lessons mainly in **MS Teams** (45.16%) followed quite closely by **Zoom** (29,3%) and Google Meet (16.13%). **Other digital tools** used were Skype, WebEx by Cisco and Big Blue Button.



How easy was it to start teaching online lessons through these platforms? (very difficult 1 – 5 very easy)

Teachers: Most teachers report that it was easy (52,6%) or very easy (23,7%) to start teaching using the mentioned platforms. Only a 2,6% considered very difficult to use the digital applications. The majority of teachers comment that the applications which they used are intuitive and easy to use. The main technical challenge reported was slow internet connection (*while quite rare in Germany*).

11 - How easy was it to start attending online lessons through these platforms? (1- Very Easy / 5 - Very Difficult) ³⁸ responses













Mention the challenges that you consider that your country faces in respect to the digitalization of VET.

Teachers consider "digital competences" as the most important challenge that VET digitalization faces (79,2%), followed by "Experienced Staff" (75%), "Content Creation" (62,5%), "Equipment" (58,3%) and "Willingness to Adapt" (45,8%).

12 - Mention the biggest challenges that you consider that your country faces in respect to the digitalization of VET.
 24 responses



What digital skills do you need in a vocational course?

Teachers mentioned "creation of digital content" (83,3%), "Problem solutions" (83,3%), "computer knowledge and data knowledge" (79,2%) and "Communication and collaboration" (75%) as the most needed skills in a vocational course.







13 - What digital skills do you need in a vocational course?

24 responses



Which digital skills do you think will make your lessons more efficient and effective?

Teachers consider "Creation and Visualization of Content" (75%), "Technologies of Presentation and Multimedia" (87,5%) and "Competencies of Learning Simulations" (83,3%) the three skills that must be mastered to make lessons more efficient and effective.

14 - Which digital skills do you think will make your lessons more efficient and effective? ²⁴ responses



Challenges in students' engagement

Do you believe that you have achieved your educational goals through these new methods?







15 - Do you believe that you have achieved your educational goals through these new methods? (1-Disagree / 5-Totally agree)





Teachers are quite divided on this one. Even though their responses tend to be on the positive side, only 8,3% consider totally agree while 50% ("neutral" to "disagree") consider that the learning material <u>is not</u> <u>really</u> transmitted properly in a virtual mode. Teachers acknowledge that putting certain training topics into practice virtually can be difficult. Teachers have a difficult time determining whether or not their students are paying attention during online sessions because there is a lack of proactive student feedback.

Do you believe that students responded positively to the challenges, and were able to attend the class efficiently?

The majority of teachers (70,8%) consider that students have responded positively to the challenges.



Do you believe that one can achieve the same learning outcomes, attending a lesson physically, and/or virtually? (Completely disagree – completely agree)







Teachers: The majority of teachers tends to the positive side, with 8,3% "totally agree", 41,7% "agree",

while the "neutral" opinions gather 20,8% of them.



17 - Do you believe that one can achieve the same learning outcomes, attending a lesson physically, and/or virtually? (1-Disagree / 5-Totally agree) ²⁴ responses

What did you enjoy most about the delivery of your lesson virtually?

Teachers believe that teaching students through online platforms has many advantages, including the ability to use dynamic teaching methods that simplify the process of information and resource sharing and the provision of students with increased opportunities to engage with the teachers through the use of digital educational apps.

There are also additional benefits, such as the ability to learn in an environment that is most conducive to one's needs, the availability of a broad variety of digital tools that can facilitate one's education, and the feeling of ease that comes with these options.

VET students/learners' questionnaires

The results of the VET students/learners participating in the research, they are presented as follows:

Demographical data

What is your age?

Students: 81.6 percent of the students who responded to the survey are younger than 30 years old.







1 - What is your age?

38 responses



What is your gender?

Students: 52.6 percent of the students were female, while 47.4 percent were male.



Teaching & Learning methods

Which were the teaching methods that your teacher used to deliver the lesson?

Students said that "Lectures" (97.4%) and "Videos" (89.5%) were the most often used instructional strategies, followed by "Group Activities" (65.5%). "Use interactive games" is the only teaching approach that was employed infrequently, at just 26.3%.







3 - Which were the teaching methods that your teacher used to deliver the lesson? ^{38 responses}



How do you prefer to take your lessons?

Students slightly prefers courses "in face-to-face" <u>only</u> (50%). Hybrid courses is also preferred at 47.4%. Meaning that 97.4% of them do not want the courses to be delivered online <u>only</u>.





Do you have the possibility of recording your lesson, is the delivery asynchronous, so that you can attend it at any time?

Students: The majority of students have reported that they don't have the possibility to record / or have access to records of the lessons (68,4%).







5 - Are your online lessons recorded so that you can attend them at any time? ^{38 responses}



Did you use any online educational application or tool? If yes, indicate which:



Students report to have used several applications with different purposes:

education content management such as <u>Google Classroom</u> (11), <u>Moodle</u> (10) or <u>Mentimeter</u> (3)







- The most common apps are included in "packs". The two most common packs used by students were <u>Microsoft Office</u> 17 (including MS Teams 5) followed without surprise by <u>Google Suite</u> 16 (Google Classroom (11); Google Drive (1); Google Meet (2); YouTube (2)) and <u>Adobe</u> 4.
- Other applications mentioned by students were <u>Kahoot</u> (interactive quizzes 9) and <u>Canva</u> (media content creator - 4)
- Big Blue Button (BBB) an open-source virtual classroom application was mentioned once (1) by a student
- Finally, students mentioned video-communication service apps such as Google Meet (2), Microsoft Teams (5) and Zoom (3)

Did you experience any additional stress or workload due to the online delivery of the lesson?

Students: 65,8% of the students reported to have experienced extra stress or workload due to the online delivery of the lesson.

7 - Did you experience any additional stress or workload due to the online delivery of the lesson? 38 responses









Identification of digital skills

Which device did you use for the online lessons?

• **Students:** Computer is by default the device used to attend online lessons (100%). But they also experienced it using tablet (39,5%) and smartphones (26,3%).

8 - Which device did you use for the online lessons? 38 responses



How easy was it to start attending online lessons through these devices? (1- Very difficult / 5 - Very easy). Explain your answer.

• **Students:** 94.8% of them had no – or very little - difficulty using their devices to follow their online lessons (31,6% easy, 32,6% very easy).







10 - How easy was it to start attending online lessons through these devices? (1- Very Easy / 5 - Very Difficult) ^{38 responses}



Which was the online platform (e.g. Zoom, Cisco WebEx) that you use for the delivery of the online courses?

The majority of Students mentioned that they held their lessons mainly in **MS Teams** (44.74%) followed quite closely by **Zoom** (31,58%) and Google Meet (21.05%). **Other digital tools** used were Skype, WebEx by Cisco and Big Blue Button.



How easy was it to start attending online lessons through these platforms? (students) (1- Very difficult / 5 - Very easy). Explain your answer

Students: Only 2,6% of the students considered difficult to follow online lessons through the mentioned platforms. The results of the survey indicate that most students (76.3%) consider following online lessons on those platforms simple or very simple (52,6% easy, 23,7% very easy).







11 - How easy was it to start attending online lessons through these platforms? (1- Very Easy / 5 - Very Difficult)





Mention the challenges that you consider that your country faces in respect to the digitalization of VET.

Students consider "Digital Competencies" as the most important challenge that VET digitalization faces (81,6%) followed by "Willingness to Adapt" (76.9%) and "Experienced Staff" (76,9%). Other challenges that are considered quite important are "Equipment" (47,4%), "Funding" (42,1%) and "Content Creation" (42,1%).



12 - Mention the biggest challenges that you consider that your country faces in respect to the digitalization of VET.

What digital skills do you need in a vocational course?

Students consider "computer knowledge and data knowledge" (97,4%), "communication and collaboration" (94,7%) and "Communication and collaboration" (89,5%) as the three most needed skills in a vocational course. "Problem solutions" is also noted as an important needed skill (57,9%) while "Security" doesn't seem to be noted at all (5,3%)







13 - What digital skills do you need in a vocational course?





Which digital skills do you think will make your lessons more efficient and effective?

Students consider "Creation and Visualization of Content" (97,4%), "Technologies of Presentation and Multimedia" (89,5%) and "Competencies of Learning Simulations" (86,8%) the three skills that must be mastered to make lessons more efficient and effective.



14 - Which digital skills do you think will make your lessons more efficient and effective? ^{38 responses}







Challenges in students' engagement

Do you feel that the basic principles of the learning material are transmitted to you properly in a virtual mode? If not, what do you believe is missing?

15 - Do you feel that the basic principles of the learning material are transmitted to you properly in a virtual mode (1-Disagree / 5-Totally agree) ^{38 responses}



Students are divided on this issue. Even though their reactions are generally positive, just 5.3% are completely in agreement, whilst more than 50% ("neutral" to "disagree") believe that the learning material is not transmitted properly in a virtual mode. Less favorable responses include the lack of social engagement with both other students and teachers, the lack of reaction and time for arguments in online classes, the lack of innovation among teachers, and the need for more dynamic courses to increase students' concentration and focus.







Do you believe that teachers responded positively to the challenges, and were able to attend the class

efficiently?

The majority of students (73,7%) consider that students have responded positively to the challenges.

16 - Do you believe that teachers responded positively to the challenges, and were able to deliver the class efficiently?

38 responses



Do you believe that one can achieve the same learning outcomes, attending a lesson physically, and/or virtually? (Completely disagree – completely agree)

• **Students:** The majority of students either stand for "neutral" (47,4%) or consider that the same learning outcomes can't be achieved exchanging format (7,9% completely disagree, 18,4% disagree). While 26,3% of students agree with that statement, **none** <u>completely</u> <u>agree</u>.

17 - Do you believe that one can achieve the same learning outcomes, attending a lesson physically, and/or virtually? (1-Disagree / 5-Totally agree) 38 responses



What did you enjoy most about the delivery of your lesson virtually?







Students: The opportunity to study from home and eliminate the need to travel to school is the advantage of online education that is most typically highlighted by students. Another benefit is the reduced cost of the education. The usage of various educational programmes, the flexibility of the timetable, the lengthening of breaks, and the accessibility of digital documents are all popular with students.









Discussion - Focus Groups

On the 13th of October 2022, the representatives of the organization EVBB with the help of the representatives of the "University of Economics for Management (HdWM)" implemented a face-to-face focus at the premises of the university in Mannheim (Germany).

Twelve people among VET teachers and learners attended the focus group; the discussion was facilitated by Samir Cheriaa, Project Manager at EVBB.

The meeting began with an introductory and comprehensive explanation of the project, its primary purpose, objectives, and core operations, as well as the consortium members. The attendees were given an overview of the legal structure and current state of VET Education in Germany.

After the introduction, the conversation shifted to the implications of the limits put in place to limit the pandemic's spread, first on the education system in general and then on the VET sector.

Participants were then asked how they believed the epidemic has impacted the VET education system.

All panelists agreed that the most significant change was the shift from in-person to online-only training delivery, and that this transition had a negative impact on training quality:

- lack of preparation and competencies on the part of professors to lead and develop effective, engaging, and captivating content for online courses.
- The majority of the students indicated that they would have chosen a method that incorporated more diverse tools, such as games, group activities, and interactive techniques, in order to enable a high level of attention among the students.

Several participants remarked that the online delivery entailed both advantages and problems: it facilitated the involvement of geographically challenged individuals, as they were able to attend without leaving their locations. In addition, it hindered the involvement of those who could not rely on a reliable Internet connection or the necessary equipment, such as a laptop, tablet, or other gadgets.

Regarding their preferred method of lesson delivery, the majority of participants showed a desire for a blended approach where they could attend/lead both online and face-to-face courses. Non-formal education methods, such as serious games and group interaction sessions, were emphasized as essential among the types of activities discussed.







Regarding the ability to record online lessons, the students agreed that it may facilitate the learning process because it would allow them to review the information after the lesson has completed. However, some teachers (but not all) opposed the idea of recording because they believed it would lead to an increase in absence.

Regarding the abilities required for a professional training, the participants mentioned:

- Expertise in the production of digital content
- Expertise with the computer or other essential digital equipment (tablet, phone, etc.)
- Knowledge of all the features of the programs used to deliver the lessons in order to optimize their effectiveness (i.g. Teams (incl. Office 365), mentimeter, wordwall, padlet, kahoot, etc.).

To conclude: The majority of teachers responded that the most effective technique should incorporate a hybrid process that anticipated both. According to the majority of students, the most important factor is not whether the lesson is delivered online or in person, but rather the quality of the activities chosen, which should ensure interaction and active learner participation.

Participants' Names:

- Xiaofei Wang VET Learner
- Sanskriti Sinha VET Learner
- Mohammed Agla VET Learner
- Voukha Prashantha VET Learner
- Natalia Mustafa VET Learner
- Neha Nagne VET Learner
- Hans Rudiger VET Teacher
- Ilkmir Doral VET Learner
- Luetfi Caynakci VET Learner
- Rayan Solman VET Learner
- Dolores Sanchez VET Teacher
- Jorge Luis Rojas Dominguez VET Teacher











Conclusion

The outcomes of the survey given to both teachers and students indicate that digital education faces a number of challenges, and it is not considered that it is capable of producing the same results as traditional learning methods. After giving careful consideration to all of the survey's findings and drawing inspiration from the responses, we have come to the conclusion that the Hack4Society project may play a role in helping to bridge the gap between traditional and online education in terms of the outcomes of students' education. We suggest discussing the following topics during Hackathon events in order to accomplish this aim, which are as follows:

- **Focus:** Digital education is accompanied with a poor level of attention, which is the most frequently cited difficulty by both students and teachers. Hack4Society need to tackle the question of how to keep the attention and engagement of students in online education.

- **Comfort:** The most often cited advantages of digital education were the convenience of working from home and the elimination of travel time. Additionally, several students cited the schedules with more breaks and the lack of noise as additional benefits of online classes. This initiates a dialogue about reimagining educational settings and scheduling to accommodate students' needs. Hack4Society can provide the chance for young people to contribute their perspectives on this issue.

- **Effective and Creative Content:** The fact that formal educational content is not sufficiently suited to the new media is evidenced by the fact that content creation is one of the students' primary criticisms of professors. Hack4Society can give a forum for young students and teachers to share their knowledge of new technologies in order to provide guidelines for the production of relevant and interesting content.

- Mastering the right Apps and Tools: Students and instructors have cited a number of teaching-related applications in the study. The majority of these applications are tied to "one-sided communication" that replicates the ways of offline instruction. On the market, there are a variety of apps that may be used for educational purposes, each with unique qualities that allow for the extension and diversification of new techniques and the adaptation of existing ones. Future participants of Hack4Society events might investigate and suggest both new applications and new teaching techniques that instructors could include into their classes and be instructed on how to utilize.

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4. Greece

Introduction

Description of the project

The HACK4Society project introduces a bottom-up approach and provide VET Professional and Learners the floor to propose e-learning modules, training methodologies and techniques, that will create a better learning experience, creating a better e-learning environment.

This is realized through hackathon events and the preparation of Open Educational Resources (OERs). Hack4Society will prepare 15 e-learning Trainings Modules, that will be incorporated in the operation of EVBB (Major European VET Umbrella Organization), offering them to all VET providers across the EU, especially targeting the smaller institutions.

Hack4Society is meant for:

- VET providers, particularly the smaller ones (regional or local level) who are going to have access to state of the art and tailored e-training modules, that they would otherwise not be able to develop.
- •VET teachers and trainers who are going to acquire better digital competences. VET Tutors and career counsellors, who will have access to ready to use software and e-modules in the form of OERs.
- VET learners who are going to have a better learning experience in an e-environment.

Objectives of the project

- 1. Reinforce the ability of VET providers to provide high quality, inclusive digital education.
- Provide new upskilling OER/15 e-learning Trainings Modules for VET professionals, that are going to be incorporated in the operation of the EVBB, offering them to all VET providers across the EU, targeting the smaller institutions.
- 3. Building capacity through Bottom-Up approaches based on the hackathon Events organized during the project implementation period.











- 4. Develop high quality digital content, promoting innovative methods and tools for e-teaching and e-learning for the members of EVBB and available for all
- 5. Promote and deliver networking opportunities among VET providers, achieved through the participation of EVBB.
- 6. Development of tailor-made solutions adaptable at a Regional/Local level.

Purpose of the study

The purpose of this study is to identify the gaps in the learning experiences of VET education in the delivering of e-learning due to Covid-19, the existing digital skills that VET teachers/trainers acquire, the ways that VET teachers and trainers adapt to both anticipated and unanticipated changes, the policies related to curricula, occupational and educational standards, qualifications, programs, learning outcomes that VET teachers and trainers should possess, the thematic areas in which teachers/trainers need to be trained to deliver high quality teaching activities, the current state of VET teachers/trainers training in respect of the key components of DigiComp 2.0, the technical specifications of the Hackathon events, and the crucial components of the Hackathon materials.







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Methods

The skills mapping to identify the key components of digital competence in terms of the knowledge, skills, qualifications, experiences and attitudes needed to be enhanced and supported from VET teachers and trainers in virtual classes and e-learning was identified through:

1. the implementation of 2 focus groups in each partner country with representatives of the ICT industry and educational institutions with specialization in technology, innovation and digital areas to get their inputs on the digital skills needed.

2. Development of interview questionnaires for VET teachers/trainers and VET students/learners.

In this context, the desk and field research were conducted in accordance to the following needs investigation:

- Digital skills and competencies needed
- Current knowledge
- Experience and qualification
- Attitude to adapt to digitization
- How do you perceive digitization to manifest in your work?
- To what extent do you think it will have an impact on ...?
- Key attitudes and behaviors displayed?
- Main learning media
- Main training areas to be developed
- What do you think are the main barriers for moving to a digital platform?
- Soft skills
- Social skills, capability of transmitting knowledge using digital tools
- Psychology factors, cause of anxiety, lack of physical connection
- Technical or Professional/ Experience-based skills
- What is the current status and how urgent is the need according to the VET teacher and trainers?

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- Training provisions
- Teacher centric? Student centric?
- Innovation and critical thinking capabilities...

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- Digitally enriched curriculum
- Digital designing of educational programs
- How to support, stimulate and empower the VET teachers and trainers
- Need for adaptation
- Efficiency and accessibility through digitization
- Subject specific competencies; Communication competencies; Process related competencies








<u>Results</u>

During the conduction of the desk and field research, the Greek partnership gathered 70 responses in each questionnaire, 70 responses for the Hack4Society VET teachers/trainers' questionnaire and 70 responses for the VET learners/students' questionnaire.

VET teachers/trainers' questionnaires

The results of the VET teachers/trainers participating in the research, they are presented as follows:





From 70 participants, 21 participants are in the age range of 31-40 (30%), while 17 participants are in the 41-50 age range (24.3%) and 16 participants are in the >30 age range (22.9%). 11 participants are <30 (15,7%).



What is your gender?







From 70 participants, 42 participants are women (60%), while 21 participants are men (30%) and 5 participants are non-binary (7.1%). 2 participants per not to say (2.9%).



From 70 participants, 47 participants prefer lectures (67.1%), while 33 participants prefer watching videos (471%) and 18 participants are in favor of using interactive games (25.7 %). 12 participants prefer group activities during the lessons (17.1 %). Thus, lectures were the most preferred teaching method (67.1%) showing that the teachers are more familiar with the traditional teaching means and they are not acquainted with interactive applications and tools.



How do you prefer to deliver your lessons?

From 70 participants, 33 participants prefer the conduction of lessons in person (47.1%), while 26 participants prefer hybrid lessons (37.1%) and almost 18 participants are in favor of online lessons (25.7%). Thus, the virtual lessons are less preferred by the teachers and trainers.







Do you provide the possibility of recording to your lesson, is the delivery asynchronous, so that students

can attend it at any time?



From 70 participants, 22 participants reported that they provided a recording of their lesson 'Yes' (31.4%), while 48 participants (68.9%) didn't provide lesson's recording. So, most of the lessons weren't provided to the students for further studying.



Did you use any online educational application or tool, and if yes, indicate which?

From 70 participants, 38 participants reported that they used an online educational application/tool (54.3%), while 32 participants (45.7%) didn't have the chance to use a virtual educational application/tool. Therefore, the online educational applications and tools are used almost by half of the teachers.







The 32 participants (45.7%) reported, indicatively, the following applications/tools:

- -Genially
- -MS Tools
- -Wordwall
- -Google Classroom
- -Quizlet
- -Padlet



Did you experience any additional stress or workload due to the online delivery of the lesson?

From 70 participants, 41 participants stated that they dealt with high levels of stress and workload (58.6%), while 29 participants (41.4%) didn't feel anxiety and workload because of the virtual classes. Thus, the majority of teachers experienced high levels of anxiety because of the rapid transformation of the lessons conducted in person to the virtual classes.

Identification of digital skills

Which device did you use for the online lessons?















From 70 participants, 55 participants used computer (78.6%), while 14 participants (20%) used tablets and only 1 participant used telephone (1.4%). Thus, the computers are the most preferred teaching device.

Which was the online platform (e.g. Zoom, Cisco WebEx) that you use for the delivery of the online courses?

The majority of teachers used Zoom and Cisco WebEx for their online lessons, while the minority of teachers used Microsoft Teams and Skype.



How easy was it to start teaching online lessons through these devices?

From 70 participants, 32 participants (45.7%) stated that the conduction of the online lessons through these devices was neither easy either difficult, while 16 participants (22.9%) reported that it was fairly difficult and 13 participants (18.6%) considered it as very easy. Furthermore, 7 participants (10%) regard the use of the devices as extremely easy and 2 of the 70 participants (2.9%) consider the use of devices extremely difficult.











From 70 participants, 32 participants (45.7%) stated that the conduction of the online lessons through the platforms was neither easy either difficult, while 20 participants (28.6%) reported that it was fairly difficult and 10 participants (14.3%) considered it as very easy. Furthermore, 7 participants (10%) regard the use of the platforms as extremely easy and 1 of the 70 participants (1.4%) consider the use of the platforms extremely difficult.

Mention the three biggest challenges that you consider that your country faces in respect to the digitalization of VET.



From 70 participants, 49 participants (70%), 39 (55.7%), and 32 (45.7%) consider the digital competencies, funding and experienced staff as the biggest challenges concerning the digitalization of VET in Greece, respectively. Also, the bad internet connection and the lack of flexibility to transform the educational material to a digital form is regarded as a significant challenge (27 participants for each challenge-38.6%). The content creation is also an important challenge since 17 of 70 participants (24.3%) consider it demanding and the data protection is considered challenging by 11 participants (15.7%).







What digital skills do you need in a vocational course?



From 70 participants, 54 teachers/trainers (77.1%) consider the creation of the digital content as the most important digital skill, while 43 participants (61.4%) believe that the computer and data literacy are the most essential skills. Also, 28 teachers (40%) have selected the communication and collaboration, and 25 of the total participants (35.7%) consider problem solution as an essential skill in vocational course. Last but not least, the security literacy is deemed necessary by 9 participants (27.1%).

Which digital skills do you think will make your lessons more efficient and effective?



From 70 participants, 48 teachers/trainers (68.6%) consider the creation and visualization of the content as the most essential digital skill for the delivery of efficient and effective online lessons. 43 participants (61.4%) and 37 teachers (52.9%) regard the creation and visualization of content and the competencies of learning simulations as important digital skills, respectively. The artificial intelligence has been selected by 16 participants (22.9%) and the cyber security and data protection by 15 participants (21.4%). Last but not least, the programming for mobiles and the cloud technology have been opted by a lower number of participants (cloud technology: 13 participants/ 18.6%, and programming for mobiles: 10 participants/14.3%).

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Challenges in students' engagement



Do you believe that you have achieved your educational goals through these new methods?

33 out of 70 participants (47.1%) reported that they have achieved their educational goals through the new teaching methods, and 25 participants (35.7%) successfully attained their goals. Also, 8 teachers (11.4%) have achieved their educational goals very difficultly and almost 2 participants (5.7%) consider the educational goals' achievement as a very easy process.

Do you believe that students responded positively to the challenges, and were able to attend the class efficiently?



Regarding students' reaction in online classes, 39 out of 70 participants (55.7%) stated the students responded positively in the challenges, while 31 participants (44.3%) selected the option "No."







Do you believe that one can achieve the same learning outcomes, attending a lesson physically, and/or virtually?



27 participants out of 70 (38.6%) have a neutral feeling about the attainment of the same learning outcomes in physical and virtual lessons, while 24 teachers (34.3%) consider that the learning outcomes of a virtual lesson can be very difficultly attained. Also, 10 teachers (14.3%) conveyed that it is very easy to achieve the same learning outcomes, while 7 participants (10%) consider it extremely difficult. However, only 2 participants consider that both virtual and face-to-face lessons can easily have similar learning outcomes.

What did you enjoy most about the delivery of your lesson virtually?

The main elements of online lessons that most of the teachers enjoy are summarized as follows:

- interactive lessons because of the diverse and high number of educational applications and tools
- home converted to a working space
- time-saving

However, there were teachers/trainers stating that they prefer the face-to-face lessons or they didn't like the online lessons at all.

Is there any subject not covered by the aforementioned questions, or would you like to comment on something further?

The VET teachers/trainers didn't have to add comments on any other topic.











VET students/learners' questionnaires

The results of the VET students/learners participating in the research, they are presented as follows:



From 70 participants, 30 students are in the >30 age range (43.5%), 21 participants are in the age range of 31-40 (30.4%), while 10 participants are in the 41-50 age range (14.5%) and 5 participants are in the <30 age range (7.2%). 4 participants are over 50 years old (5.8%).



What is your gender?

From 70 participants, 39 participants are women (56.5%), while 20 participants are men (29%) and 8 participants prefer not to say (11.6%). 2 participants are non-binary (2.9%).







Teaching & Learning Methods



Which were the teaching methods that your teacher used to deliver the lesson?

56 students out of 70 students (81.2%) reported that lectures are the most common teaching method, while 36 of them (52.2%) stated that the use of videos were also included in the learning process. 8 participants (11.6%) conveyed that the use of interactive games and the group activities were part of the teaching methods and tools.



How do you prefer to take your lessons?

From 70 participants, 32 participants prefer the conduction of lessons virtually (46.4%), while 26 participants prefer hybrid lessons (37.7%) and almost 19 participants are in favor of hybrid lessons (27.5%). Thus, the virtual lessons are less preferred by the teachers and trainers.

Do you have the possibility of recording your lesson, is the delivery asynchronous, so that you can attend it at any time?









From 70 participants, 24 participants reported that they received a recording of their lesson 'Yes' (34.8%), while 45 participants (65.2%) didn't have the possibility of recording. So, most of the lessons weren't provided to the students for further studying.



Did you use any online educational application or tool, and if yes, indicate which?

From 70 participants, 24 participants reported that they used an online educational application/tool (34.8%), while 45 participants (65.2%) didn't have the chance to use a virtual educational application/tool. Therefore, the online educational applications and tools are used almost by half of the students.







Did you experience any additional stress or workload due to the online delivery of the lesson?



From 70 participants, 33 participants stated that they dealt with high levels of stress and workload (47.8%), while 36 participants (52.2%) didn't feel anxiety and workload because of the virtual classes. Thus, the majority of students didn't experience high levels of anxiety because of the rapid transformation of the lessons conducted in person to the virtual classes.



28%

From 70 participants, 42 participants used computer (60.9%), while 19 participants (27.5%) used tablets and only 8 participants used telephone (11.6%). Thus, the computers are the most preferred learning device.

61%







Which was the online platform (e.g. Zoom, Cisco WebEx) that you use for the delivery of the online courses?

The majority of the lessons were conducted on Zoom and Cisco WebEx for the online lessons, while the minority of them were conducted in Microsoft Teams and Skype.



How easy was it to start attending online lessons through these devices?

From 70 participants, 26 participants (37.7%) stated that the conduction of the online lessons through these devices was neither easy either difficult, while 19 participants (27.5%) reported that it was fairly difficult and 15 participants (21.7%) considered it as very easy. Furthermore, 6 participants (8.7%) regard the use of the devices as extremely easy and almost 3 of the 70 participants (4.3%) consider the use of devices extremely difficult.



How easy was it to start attending online lessons through these platforms?

From 70 participants, 24 participants (34.8%) stated that the conduction of the online lessons through the platforms was neither easy either difficult, while 23 participants (33.3%) reported that it was







fairly difficult and 15 participants (21.7%) considered it as very easy. Furthermore, 5 participants (7.2%) regard the use of the platforms as extremely easy and almost 2 of the 70 participants (2.9%) consider the use of the platforms extremely difficult.

Mention the challenges that you consider that your country faces in respect to the digitalization of VET.



From 70 participants, 48 participants (69.6%), 34 (49.3%), and 31 (44.9%) consider the digital competencies, experienced staff and bad internet connection, respectively, as the biggest challenges concerning the digitalization of VET in Greece. Also, the funding and lack of flexibility to transform the educational material to a digital form are considered challenging by 28 participants (40.6%) and 17 participants (24.6%). The content creation is considered challenging from 17 out of 70 participants (24.3%) and the data protection from 11 participants (15.7%).

What digital skills do you need in a vocational course?



From 70 participants, 54 teachers/trainers (77.1%) consider the creation of the digital content as the most important digital skill, while 43 participants (61.4%) believe that the computer and data literacy are the most essential skills. Also, 28 teachers (40%) have selected the communication and collaboration,







and 25 of the total participants (35.7%) consider problem solution as an essential skill in vocational course. Last but not least, the security literacy is deemed necessary by 9 participants (27.1%).

Which digital skills do you think will make your lessons more efficient and effective?



From 70 participants, 42 teachers/trainers (60.9%) consider and the competencies of learning simulations important, while the creation and visualization of content is regarded essential by 40 students (58%). Also, 26 learners (37.7%) selected the presentation tools and 21 learners the programming for mobile phones (30.4%). The cyber security, artificial intelligence and could technology is regarded important by 17 participants (24.6%), 15 (21.7%), and 11 (15.9%).



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Do you feel that the basic principles of the learning material are transmitted to you properly in a virtual mode?



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34 out of 70 participants (49.3%) reported that the learning material goals have been transmitted fairly difficultly and 20 students (29%) stated that the learning goals were neither easily nor difficulty transmitted. Also, 8 participants (11.6%) state that the learning material was easily transmitted. Last but not least, 5 students (7.2%) reported that the learning material was extremely difficultly transferred. Almost 1 participant (2.9%) stated that the learning material was transmitted.

Do you believe that teachers responded positively to the challenges, and were able to deliver the class efficiently?



Regarding teachers' reaction in online classes, 39 out of 70 participants (56.5%) stated the students responded positively in the challenges, while 30 participants (43.5%) selected the option "No."

Do you believe that one can achieve the same learning outcomes, attending a lesson physically, and/or virtually?



30 participants out of 70 (43.5%) consider that the learning outcomes were attained fairly difficultly, while 21 participants (30.4%) regard the outcomes achievement neither easy nor difficult. Also,







12 students (17.4%) reported that it is very easy to achieve the outcomes and 4 students (5.8%) consider the achievement of learning outcomes extremely difficult. Almost 1 participant (2.9%) conveyed that it is highly easy to attain similar learning outcomes.

What did you enjoy most about the delivery of your lesson virtually?

The main elements of online lessons that most of the students enjoy are summarized as follows:

- interactive lessons because of the diverse and high number of educational applications and tools
- flexible schedule
- time-saving
- visualization of the training material

Focus Groups

On the 13th of July 2022, a focus group in the implementation framework of the "HACK4Society: Digital Hackathon Training Events in the Service of E-Learning Solutions for the post Covid-19 Society" project was conducted, in a hybrid form, both online, and face-to-face at the premises of Innovation Hive. The discussion was mediated by Chrysi Triantafyllou, Project Manager at Innovation Hive. In parallel, the second focus group was conducted online and was mediated by Christina Triantafyllou, Project Manager at AKMI. Both focus groups were comprised by VET teachers/trainers and VET learners/students. The first focus group was constituted by 8 participants and the second group by 7 participants.

Firstly, a presentation of the project and its objectives, scope, aims, and desired impact was made to the participants, in order for them to be acclimated with the point of the focus group. Furthermore, they were informed regarding the progress of the project and its deliverables, and the next steps to come.

The conversation continued with the presentation of the general framework of the VET education in Greece, with a specialization in the digital literacy trainings and programs offered. All the participants agreed upon the strong existence and high importance of VET institutions in Greece, especially in the last years, and due to the variety of training programs they offer.

After that general discussion, we moved to the effect of the Covid-19 pandemic in education in general, and in the VET system in specific. It was commonly agreed that the pandemic brought tremendous changes to the delivery of VET education, moving all delivery methods to online. The hardest







task was to keep the interest of the learners, and skip the plain delivery only by means of the teacher speaking.

Some of the available methods for the online delivery, are the lectures, the use of audiovisual material, the use of interactive games, and group activities. The majority of the learners admitted that the lessons they were taking were delivered primarily via lectures, and they lacked of interest, especially when the hours were long. What is more, many teachers stated that they lack the necessary knowledge to create interactive lesson capturing students' attention.

The majority of the learners claimed that they prefer at least a hybrid delivery of their lessons, both face-to-face and online, because the online delivery provides the opportunity of attending the course from wherever, and most of the times, asynchronous. The teachers appeared more reluctant when it comes to online delivery.

Furthermore, they admitted of the use of recording of their lessons, always after agreeing to the requirements of the GDPR regulations, because the recorded lessons provide the opportunity of attending the course asynchronously, at any time of the day, at each learner's convenience. However, many of them highlighted the fact that they are often afraid of recording the lessons or they feel uncomfortable to be recorded.

The difficulty arises when it comes to the use of educational online tools and platforms, since their existence and possibilities are not that spread and known to the teachers, especially those being older. So, the need of trainings regarding the existence and possibilities that educational online tools offer was noted, and agreed upon by the majority of the participants. Even if the majority of them lacks the necessary knowledge for utilizing new educational online tools and applications, they are in favor of acquiring new competencies and skills.

The vast majority of the participants noted that they had the necessary equipment for the delivery/attendance of online classes, meaning laptops, computers, tablets and cell phones, but some admitted that they own not that up-to-date equipment, and that there should be a fund for the update of those who need it, and do not have the financial capability of acquiring it.

Some of the challenges that Greece faces in relation with the digitization of the VET delivery of training programs, as discussed by all the participants, are the lack of digital skills, especially by older people, the lack of funds for equipment, expertise, trainings, the lack of expert personnel in the VET







institutions, problems when it comes to internet connection, data protection issues, content creation, and transformation of the educational material to online/digital form.

It was also commonly agreed that some of the competencies needed for the delivery/attendance of an online course are computer knowledge, digital content creation, cyber security, and problem resolution, and they found crucial for them to be trained in the fields of educational simulations, content creation and visualization, technologies of presentation and multimedia, Artificial Intelligence, programming for mobile phones, Cloud technologies, and cyber security along with data protection.

Both learners and teachers claimed that they responded positively in the delivery of online courses, even if it was initially difficult to transform the traditional classrooms to the online learning environments but the majority of the teachers indicated that they do not think that the online delivery has the same educational benefits as the face-to-face, while the learners were divided, because yes, the face-to-face provides many opportunities for communication, social relationships, posing questions and receiving answers at real time, but they acknowledge the benefits of online delivery as well, meaning the possibility of attending the courses at any time and place, and based on their everyday needs and free space. Thus, hybrid lesson is proved to be the most preferred delivery method.

Focus group 1

Participants' Names:

Samara Daphne-Irene, VET Teacher Patsiaoura Tania, VET Teacher Dimoulia Evdokia-Panagiota , VET Learner Petropoulou Maria, VET Learner Papavasileiou Domna , VET Teacher Gkouzgkoureta Aglaia, VET Teacher Vavleki Eleni, VET Learner Dagli Georgia, VET Learner

Focus Group 2

Participants' Names:

Katerina Vezyroglou , VET Trainer Nickolaos Koulopoulos, VET Trainer Epameinondas Karinos [VET Trainer









Gkolfo Tsatsari, VET Trainer Maria Pogiatzi , VET Learner Christina Gkogkou, VET Trainer Anna Triantafyllou, VET Learner

Discussion

The questionnaires disseminated and focus groups conducted provided the partnership with valuable viewpoints concerning the digital education and the design of the forthcoming training material and activities.

Teaching & Learning Methods

All participants, both teachers and students, agreed that the lectures were the primary teaching method used for the delivery of the lessons because of tis alignment with the traditional lessons and classrooms. The teachers were more acquainted with the conduction of lessons through lectures because they lack knowledge in the integration of videos, interactive games and group activities in the face-to-face and online classes. The virtual classes raised teachers' stress levels about the proper process that should be followed in order to efficiently and effectively transmit the teaching material to their students.

Concerning the delivery mode of the lessons, it is exceptionally defined that VET teachers and VET learners had different opinion. VET teachers prefer the lesson conducted in person, but the VET students are in favor of hybrid and virtual classes. Thus, the online education is considered more aligned with the students' needs and desires.

Identification of digital skills

With regards to the devices in online education, both teachers and students have stated that they usually used computers for their online lessons. However, a high number of students preferred the use of tablets and mobile phones. The diverse selection of devices for the delivery of the lessons is associated with the diverse role of teachers and students in the learning process. It is accepted that teachers feel that they can more easily implement and track the lesson through a computer device, but the students







consider their role as more passive and less energetic in the attainment of the learning outcomes and learning objectives.

What is more, most of the teachers preferred to capitalize on the most well-known online applications and tools in order to deliver their lessons. However, the majority of them has reported that the use of online education and communication applications and tools is a difficult process that requires customized trainings and specialized competencies for its efficient implementation. Therefore, there is high demand for developing digitally confident and competent teachers creating quality learning experiences for their learners.

The VET teachers and students also highlighted that the most essential digital skills for the conduction of online lessons are the computer and data protection literacy, the digital content creation, the cooperation and proper communication among online learners and students, the problem solving and the security in the virtual learning environments. The essence of the above-mentioned digital skills is exceptionally linked to the lack of digital skills in Greek teachers' workforce, the lack of experienced teaching staff in online education and the funding. Thus, the online education is getting mandatory and a significant part of teachers' initial and continuous training.

Challenges in Teacher's engagement

The attainment of the lessons' learning outcomes in online education is considered as the most demanding and challenging part by both teachers and students. Exceptionally, teachers deem that the face-to-face lessons can have more beneficial effects on students' learning since the online lessons are considered less effective and of lower quality. This is the reason that both groups regard that online education didn't fulfill the students' learning goals.









Conclusion

To sum up, the field research provided the consortium with beneficial insights about the needs and gaps in teachers' competencies and skills in online education and training. It is generally accepted that teachers became frustrated with the unexpected pandemic outbreak and the rapid transformation of the traditional classrooms to the virtual environment. The societal challenges exceptionally affected the education providers and forced education systems and all relevant stakeholders to redefine their perception in the skills and competencies that teachers should acquire so as to be able to efficiently deliver online lessons.

The Hack4Society project will support the teachers' training in efficiently delivering online lessons through the provision of new upskilling e-learning training modules for VET professionals and VET providers. Also, the Hack4Society project will increase the capacity of teachers in delivering online lessons through the implementation of Hackathon events that will educate teachers in the development of highquality digital content, promotion of innovative methods and tools in online teaching and learning process.







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5. Italy

Introduction

Regarding the survey conducted, FORTES Impresa Sociale has used two different questionnaires, one for students and one for teachers, prepared by Innovation Hive and developed with the feedback provided by the members of the consortium. Both questionnaires were translated to Italian in order to make it easier for the Italian respondents to express themselves. The questionnaires were converted in Google Form to be disseminated.

For the dissemination of questionnaires, FORTES has taken advantage of its large contact list of schools, ex-Erasmus students and public information with the aim of arriving at the target groups. From our contact list, FORTES have selected only VET schools and students that have participated in VET courses from Italy. We have reached in total 171 VET Students and "X" VET teachers who provided us with the necessary data for conducting our analysis under the study criteria.

The results were analyzed from both a quantitative and qualitative perspective. Quantitatively, FORTES has interpreted the results obtained from the close-ended questions, and several open-ended questions when necessary, and converted them into visual outcomes. Qualitatively, FORTES has interpreted the results of the rest of the questions, all open ended, and selected insights gotten from the answers of participants.

Regarding the focus groups, participants were asked the same questions included in the questionnaire. Further, new questions were asked on the spot with the aim of better understanding the impact of the digital transition in education. VET teachers and staff answers were analyzed and included in the discussion and the conclusions.







Results

Demographical data

What is your age?

All of the students who answered the questionnaire are under 30 years old.

What is your gender?

The majority of students' answers were given by females (63,7%), followed by males (31%) and others (5,3%).



The majority of teacher's answers were given by females (67,1%), followed by males (29,1%) and others (3,8%)







Quale è il tuo genere? 79 risposte



What is your country?

All answers, both from students and teachers, are from Italians or people residing in Italy.

Teaching & Learning methods

Which were the teaching methods that your teacher used to deliver the lesson?

Students reported as the most common used methods were "Group activities" (63,7%) and Videos (62,6%), followed by conferences (27,4%) and interactive games (10,5%).



Quali di questi metodi usano nelle lezioni i tuoi professori? 171 risposte

Teachers reported that the most commonly used methods were "Group activities" (83,5%) and Videos (62%), followed by conferences (39,2%) and interactive games (30,4%).







Quali di questi metodi usi nelle tue lezioni? ^{79 risposte}



How do you prefer to take your lessons?

Students strongly prefer live sessions (77,8%), followed by hybrid (18,7%) and online (3,5%).



Most of the teachers prefer live sessions (87,3%), followed by hybrid (11,4%) and online (1,3%).







Come preferisci tenere le tue lezioni? 79 risposte



Do you have the possibility of recording your lesson, is the delivery asynchronous, so that you can attend it at any time?

The great majority of students have reported that they don't have the possibility to record the lessons (69,6%). The reported either yes (24,6%) or yes but only in specific cases.

Avete la possibilità di registrare la vostra lezione in modo che la potete rivedere in qualsiasi momento?

171 risposte



65,8% of teachers don't give the possibility of recording their lessons.







Fornite la possibilità di registrare la vostra lezione in modo che gli studenti possano partecipare in qualsiasi momento? 79 risposte



Did you use any online educational application or tool? If yes, indicate which:

Students report to have used several applications with different purposes. The applications mentioned the most are those linked with communication such as Google Meet (24), Microsoft Teams (13), or Zoom (10), and with education content management such as Google Classroom (25), Moodle (3), Fidenia (1), or Weschool (1). Other applications mentioned by students were Kahoot (interactive quizzes, 10), Canva (media content creator, 6), Microsoft Office Pack (8), Jamboard (digital whiteboard, 3), YouTube (1), Enigma 3 (creation of online tests, 1).

Teachers mention a wide range of educational applications and tools. As in the case of students, communication apps are the most common between the answers and include Google Meet (20), Zoom (9) or Cisco (1). Other apps used by teachers are Classroom (15), Kahoot (10), G-suite (8), Mentimeter (6), Canva (6), YouTube (4), Wordwall (4), Geogebra (2), Quizlet (interactive quizzes and games, 2), Jamboard (1), Genially (interactive presentation and games, 1), or Sanako (language learning software, 1).

Did you experience any additional stress or workload due to the online delivery of the lesson?

Almost 70% of the students reported to have experienced extra stress or workload due to the online delivery of the lesson.







Hai sperimentato uno stress o un carico di lavoro aggiuntivo a causa dell'erogazione online della lezione?

171 risposte



Most of the teachers (81%) considered that online lessons incremented their workload and/or stress.



Identification of digital skills

Which device did you use for the online lessons?

Computers are the most common device for attending online lessons between the students' responses (85,5%), followed by tablets (7,6%) and smartphones (5,3%).







Che dispositivo utilizza per le lezioni online? 171 risposte



Teachers use mostly computers for delivering online lessons (87,3%) followed by tablets (8,9%) and phones (3,8%).



How easy was it to start attending online lessons through these devices? (1- Very difficult / 5 - Very easy). Explain your answer.

Only 3,5% of the students considered it very difficult to follow online lessons through the mentioned devices. The results of the survey indicate that most students stand for the middle ground in giving an answer, with 40,4% of them considering neither very difficult nor easy to follow digital lessons. At the same time, there are more students that consider it simple or very simple following online lessons (21,6% easy, 11,7% very easy).





171 risposte



Quanto facile è seguire le lezioni tramite i dispositivi menzionati? (molto difficile 1 - 5 molto semplice)



Which was the online platform (e.g. Zoom, Cisco WebEx) that you use for the delivery of the online courses?

The majority of students and teachers mentioned that they held their lessons mainly in Google Meet (respectfully, 65% and 60%), Zoom (respectfully, 33% and 35%) and Microsoft Teams (22% and 9%). Other digital tools used were Skype, Cisco, Panopto or WebEx. Please, note that several students reported more than one different tool per answer.











How easy was it to start attending online lessons through these platforms? (students) (1- Very difficult / 5 - Very easy). Explain your answer

Only 1,8% of the students considered it very difficult to follow online lessons through the mentioned platforms. The results of the survey indicate that most students stand for the middle ground in giving an answer, with 40,9% of them considering neither very difficult nor easy to follow digital lessons. At the same time, there are more students that consider it simple or very simple following online lessons (29,8% easy, 13,5% very easy).

The most common challenges mentioned by students are distractions, slow internet connection, and application problems such as bugs. Generally, they consider the platforms easy to use and understand.







Quanto facile è stato seguire le lezioni tramite le applicazione menzionate? (molto difficile 1 - 5 molto semplice)

171 risposte



How easy was it to start teaching online lessons through these platforms? (very difficult 1 – 5 very easy)

Most teachers report that it was mid difficulty (32,9%) or easy (36,7%) to start teaching using the mentioned platforms. Only 2,5% considered it very difficult to use the digital applications. The majority of teachers comment that the applications which they use are intuitive and easy to use. The main technical challenge reported was slow internet connection.



Mention the challenges that you consider that your country faces in respect to the digitalization of VET.

Students consider "digital competences" as the most important challenge that VET digitalization faces (126, 73,7%). Financial issues, slow internet connection and lack of flexibility to transform the







educational material to digital form (around 90 answers per issue, 50%). An interesting fact, students didn't consider "experienced staff" as one of the main challenges (50, 29,2%).

Seleziona le tre sfide più importanti che, secondo te, il vostro Paese deve affrontare rispetto alla digitalizzazione dell'istruzione e della formazione professionale 171 risposte



Results of the teachers were very close to those of the students. Teachers consider "digital competences" as the most important challenge that VET digitalization faces (61, 77,7%), followed by slow internet connection (53,2%) and content creation together with financial aspects (38%).







Seleziona le tre sfide più importanti che, secondo te, il vostro Paese deve affrontare rispetto alla digitalizzazione dell'istruzione e della formazione professionale 79 risposte



What digital skills do you need in a vocational course?

Students consider "computer knowledge and data knowledge" (140, 81,9%), "communication and collaboration" (130, 76%) and "problem solving" (111, 64,9%) the three most needed skills in a vocational course.



Teachers mentioned "computer knowledge and data knowledge" (67,1%), "creation of digital content" (68,4%), "communication and collaboration" (58,2%) and "problem solving" (55,7%) as the most needed skills in a vocational course.






Quali competenze digitali sono necessarie in un corso professionale? 79 risposte



Which digital skills do you think will make your lessons more efficient and effective?

Both teachers and students consider "creation and visualization of content" (respectfully, 73,7% and 77,1%), "technologies of presentation and multimedia" (66,1% and 63%) and "competencies of learning simulations" (55% and 45,6%) the three best skills for making lessons more efficient and effective. From the proposed skills, students considered the less important "programming for mobiles" and teachers "artificial intelligence". One of the teachers mentioned that, in order to make online teaching more effective, lessons should be shorter.

Students' answers:



Quali competenze digitali pensate possano rendere le vostre lezioni più efficienti ed efficaci? 171 risposte







Teachers answers:



Quali competenze digitali pensate possano rendere le vostre lezioni più efficienti ed efficaci? ^{79 risposte}

Do you feel that the basic principles of the learning material are transmitted to you properly in a virtual mode? If not, what do you believe is missing?

Most of the students consider that the learning material isn't transmitted properly because of several reasons which include the missing of social interaction both with other students and teachers, dynamic lessons instead only theory, extra digital skill competences, concentration and attention.

Challenges in students' engagement

Do you believe that one can achieve the same learning outcomes, attending a lesson physically, and/or virtually? (Completely disagree – completely agree)

Half of the consulted students either disagree (31%) or completely disagree (19,3%) when asked if they believe that they can achieve the same learning outcomes in both physical and virtual lessons. 28,7% of the students declare themselves neutral. Only 8,8% of the participants completely agree with the statement.







Pensa che si possano ottenere gli stessi risultati di apprendimento frequentando una lezione fisicamente e/o virtualmente? (per niente 1 - 5 completamente) 171 risposte



On the contrary, teachers' responses are less skeptical. Most teachers stand for the middle ground (50,6%), 27,8% of them consider that learning outcomes can be reached through online methods. Only 2,5% think that isn't possible.

Ritenete di aver raggiunto i vostri obiettivi educativi grazie a questi nuovi metodi? (per niente 1 - 5 completamente) ^{79 risposte} 40 30



Do you believe that students responded positively to the challenges, and were able to attend the class efficiently?

The majority of teachers (62%) consider that students have responded positively to the challenges.







Ritiene che gli studenti abbiano risposto positivamente alle sfide e siano stati in grado di frequentare la classe in modo efficiente? ^{79 risposte}



Do you believe that one can achieve the same learning outcomes, attending a lesson physically, and/or virtually? (Completely disagree – completely agree)

The majority of teachers either stand for the middle ground (30,4%) or consider that the same learning outcomes can't be achieved by exchanging formats (21,5% completely disagree, 26,6% disagree). Only 6,3% of teachers completely agree.

Pensa che si possano ottenere gli stessi risultati di apprendimento frequentando una lezione fisicamente e/o virtualmente? (per niente 1 - 5 completamente) ^{79 risposte}









What did you enjoy most about the delivery of your lesson virtually?

The most repeated positive points that students attribute to online lessons are the comfort of remaining at home and avoiding the use of transportation for arriving at the school (considered by many students as "a waste of time"). Other facts that students like are the use of technology and different education applications, the flexibility in schedules and longer pauses, and the use of digital documents. Therefore, the positive points mentioned about online lessons by students are more related with indirect daily life improvements than with the learning process itself.

Teachers mention as positive points of the online delivery of lessons the fact of being in contact with the same technology that the students use; the possibility to use dynamic methods that allow easily sharing information and resources (such as audio or video) as well as interact more with students through digital, educational applications; comfort and flexibility regarding location; and availability of diverse digital instruments that can enhanced the learning experience.

Is there any subject not covered by the previous questions, or would you like to comment on something further?

We found an especially interesting answer from one of the teachers, who mentioned the need for specific adaptation in digital lessons taking into consideration the subject to be taught.

Discussion

On one hand, the analysis of the students' answers shows that the biggest challenge in online lessons is concentration. Students very often report that during online lessons they feel distracted, and they have more distractions available than in the classroom. Other problems that students mention is absence of direct social contact with teachers and colleges, slow internet connection or health problems (headaches or visual fatigue). From these problems, slow internet connection was reported several times, making it more difficult for students to follow lessons.

On the other hand, many students considered positively the possibility of avoiding transportation to their schools, considering more comfortable the option of staying at home. As an example of positive feedback, a student wrote "when I had to take the lessons online, I felt good. Apart from the convenience, I felt more rested and did not find any distraction being alone and without any noise in the room. The







breaks between classes were also very useful for me, especially when you had two hours of the same subject: that way I could stretch my legs a bit and have more focus once the class resumed. At school, on the other hand, very often you don't take breaks if you have a teacher for two consecutive hours, so it is more difficult to pay attention the whole time. However, I think it is better to attend classes in presence to socialize with classmates, but also to interact more easily with the professors should the need arise." This answer exemplifies very well the possible positive effects that digital learning can bring.

From the technical perspective, neither teacher nor students report big complications about learning how to use the different applications. However, there seems to be margin for improvement in the use of the different applications, especially at an advanced level. At the same time, the digital applications mentioned were linked with communication such as Google Meet or Zoom, but a low amount of interactive educational applications was mentioned.

Both students and teachers agree upon the importance of digital content creation skills and the technologies of presentation and multimedia used. Therefore, these two topics need to be subject to further attention and improvement.

From the answers received to the several open questions, we have selected three responses which we consider as a source of inspiration for better understanding the effect of digital education on students:

- "I liked the fact that some professors took more interest in the digitization of learning and still use more digital methods in face-to-face classes as well, making them more interactive". This insight could be taken as an example of good practice by the teacher, who integrated digital techniques in in-person lessons.
- "I liked the fact that I felt more rested and there were breaks between classes. It was perhaps easier to follow the lectures of some professors who presented the screen to show us the book or to accompany their explanations with written notes via the Jamboard application."
 This student opens the reflection about the possibility of enhancing learning experience using digital methods such as didactic applications.
- "I don't like being in class that much. I interact well with people, but I am reserved during lectures, and I tend to do my activities in a solitary manner anyway, listening but taking notes by myself without following much. This confidentiality of mine about lessons is respected in virtual lessons, where I do not come across as rude if I simply follow my most efficient study method."

EVBB

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Innovation







Online lessons, as this answer shows, can be beneficial from the learning perspective for people with specific learning needs and methods that match with the environmental characteristics of digital education.







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Conclusions

The survey conducted on both teachers and students shows that digital education faces several challenges, and it isn't considered that it is able to reach the same results as offline learning. After acknowledging all the insights provided by the survey, and inspired by the answers, we think that the Hack4Society project can help to reduce the gap between the learning outcomes between digital and offline education. To achieve this goal, we propose the following topics for being addressed during the Hackathon events:

-New methods for a new education. Students and teachers have mentioned during the survey several applications that they use for teaching. Most of those apps are linked with "one-sided communication" replicating the methods of offline lessons. In the market it can be found an array of applications that can be used with educational purposes with different features that allow to extend and diversify new methods as well as help to adapt traditional ones. Future participants of Hack4Society events could explore and propose both new applications and new methods that teachers could add to their lessons, teaching them how to use them.

-Augmented teaching. Digital, educational tools can be used in offline scenarios with the aim of enhancing learning experiences and to deliver hybrid lessons. Also, the integration of digital applications in offline classrooms can potentially help to reduce the technological gap between young students and teachers. Hack4Society can explore how to make this effectively possible, and through the modules created new insights, inspiration and know-how to teachers in this matter.

-Engaging education in a digital world. The most common challenge mentioned by both students and teachers is the low level of attention that comes hand to hand with digital education. Hack4Society need to tackle the question of how to keep the attention and engagement of students in online education.

-Rethinking when and where to learn. The most repeated positive points mentioned about digital education were the comfort of being at home and avoiding transportation. Also, some students mentioned as extra advantages of online lessons, the schedules with more breaks and the silence. This opens the discussion of rethinking educational spaces and schedules to meet the needs of students. Hack4Society can give the opportunity to youngsters to share their ideas in this matter.







-Meaningful content creation. Content creation is one of the biggest weaknesses that students report about teachers, showing that formal educational content isn't adapted well enough to the new media. Hack4Society can provide a space for young students and its knowledge about new technologies with teachers in order to provide guidelines for the creation of meaningful and engaging content.









6. Final conclusions

The fact that the Covid-19 pandemic affected the greatest part of our everyday lives is undoubtable. The critical part is to find the areas that were mostly affected, the target groups that experienced these times in a harder way than the rest, and provide innovative and ready-to-go solutions to bridge these gaps. Education is one of the areas that suffered the most, since the delivery of every kind of learning experience had to be transformed in a digital manner, with minimum time for adjustment, insufficient training, lack of equipment, and insecurity about the ability to transmit knowledge in such an effective way as during the face-to-face learning.

Even though desperate times call for desperate measures, it is important to focus on the positive side of the circumstances, and attempt to find ways to implement the delivery of e-learning in our new reality, since it is proven that it encouraging results can derive from it. As we all know, technology has revolutionized the way we learn and access information. With the rise of online learning platforms, it is now easier than ever to access training modules and enhance our expertise in a variety of subjects. However, it is important to ensure that these resources are accessible to all.

The main and most crucial gaps that were identified are the lack of sufficient time for adjustment to these abrupt changes, the lack of familiarization with the use of digital tools, the limited access to a variety of electronic devices, which could be summarized as equipment deficiency, the improper management of the information overload, cyber security and data management issues, and finally, the difficulty in transforming the text or lecture, in a non-text digital and interactive way. Having these findings in mind, the project consortium will have to work on introducing new innovative methods of education, augmented digital teaching, ways of protection from the hazards of online navigation, and of course, meaningful, interactive and impactful content creation. The survey findings have proven that the majority of the respondents believe that e-learning cannot substitute traditional training, and cannot offer the same results, but it is not a matter of substitution, but finding a way to introduce traditional education to a new digital era.









Aligned with the aforementioned, HACK4Society project will bridge the already existing digital gaps that were noted even before the pandemic, but were sharpened by it. Furthermore, with excellence VET, pioneer in the exploitation of digital upskilling OER modules, the project will give guidance on e-learning while providing the VET professionals the opportunity to introduce themselves online through the training modules. For the aforementioned to be delivered, the start has already taken place, by mapping the gaps, categorizing them, tracking the source of the problem, and working on the best and most feasible way to address them.







