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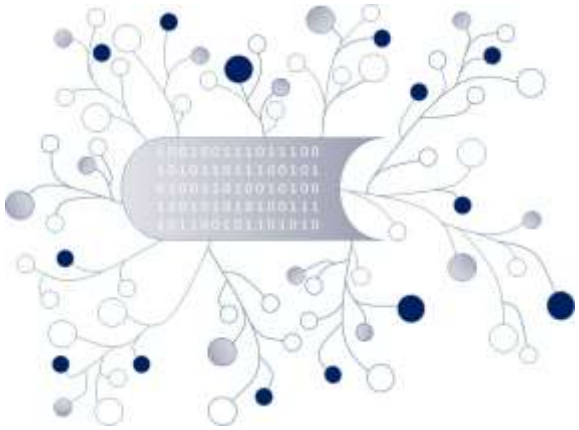

DigI-VET
Fostering Digitization and Industry 4.0 in vocational education
2018-1-DE02-KA202-005145

Questionnaire for DigI-VET

July 2019

Emphasys Centre

Project Title *DigI-VET*

Reference Number *2018-1-DE02-KA202-005145*

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CONTEXT

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Version	Date	Author	Description	Action	Pages
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(*) Action: C = Creation, I = Insert, U = Update, R = Replace, D = Delete

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Contents

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Introduction

Between the 10th of June – 20th of July 2019, Emphasys Centre conducted a survey about digitisation and industry 4.0. The idea was to get information on the current situation in Cyprus, on challenges and changes as well as on future perspectives.

We managed to get 96 participants in total, including trainers/teachers, students/learners, staff members of the Human Resources Management, business/company owners, VET-experts, Educational and Career Counsellors and other types of educational experts to answer the questionnaire.

About the Project

In the last few years' digitization is becoming more and more important. This goes hand in hand with trends towards mobile learning.

The Erasmus+ project DigI-VET addresses new and innovative ways of learning and teaching in the age of digitization and Industry 4.0. The partnership creates awareness of the needs to address digitization and Industry 4.0 in vocational education and training (VET).

The consortium will produce a DigI-VET book to create broad awareness of the topic in higher education. The purpose of it, will be to ensure that the information and best practices produced are of an appropriate standard, to create awareness and provide the necessary information.

The fifteen core results of the project DigI-VET will be:

1. the DigI-VET Curriculum
2. the DigI-VET Learning and Teaching Resources
3. the DigI-VET Online Observatory with best practice information and videos
4. the DigI-VET Book on Digitisation and Industry 4.0 in European VET
5. the DigI-VET sMOOC
6. the DigI-VET research report
7. the DigI-VET dissemination materials (posters, leaflets, brochure, cards, pens, flyer)
8. the DigI-VET Website with Blog
9. the DigI-VET Checklist for VET educators and teachers
10. the DigI-VET videos (integrated in the website and the online observatory)
11. the DigI-VET OER strategy
12. the DigI-VET digitisation concept for VET
13. the DigI-VET publications, newsletter and press-articles
14. the DigI-VET sMOOC Concept
15. the DigI-VET evaluation report

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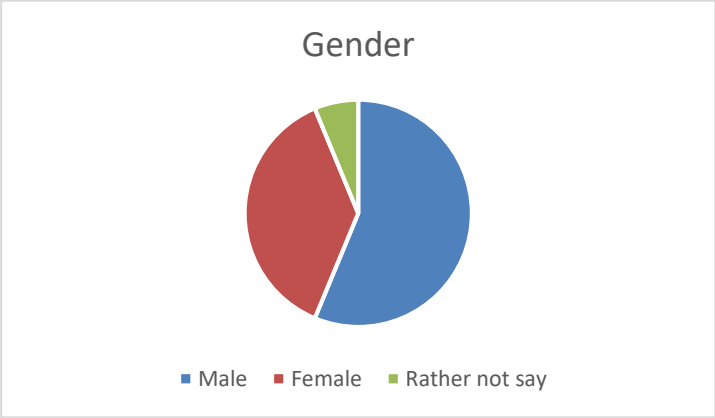
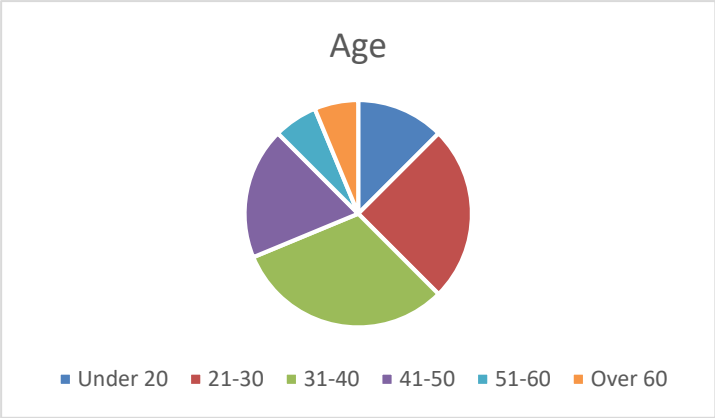
Survey Results

General Information

We conducted the survey to 96 people out of which 54 participants (56%) were male, 36 participants (38%) were female and 6 participants (6%) did not want to clarify.



The ages of the groups that participate were: 12 participants (13%) were under 20 years old, 24 participants (25%) were between the ages of 21-30, 30 participants (31%) were between the ages of 31-40, 18 participants (19%) were between the ages of 51-60 and 6 participants (6%) were over 60.



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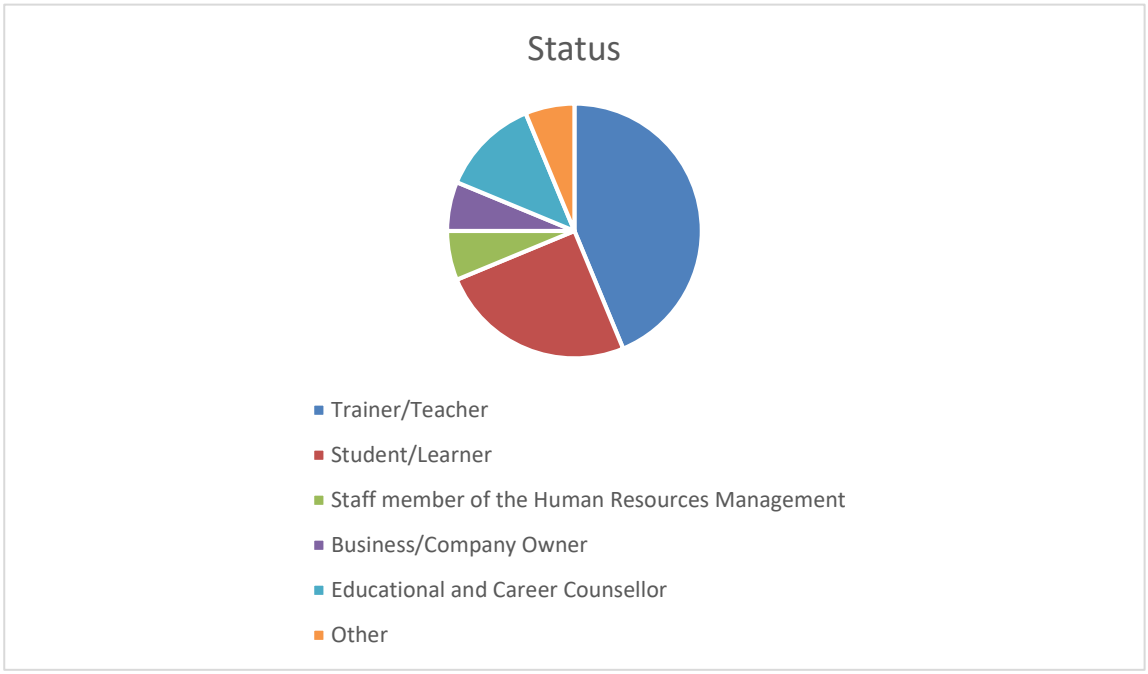
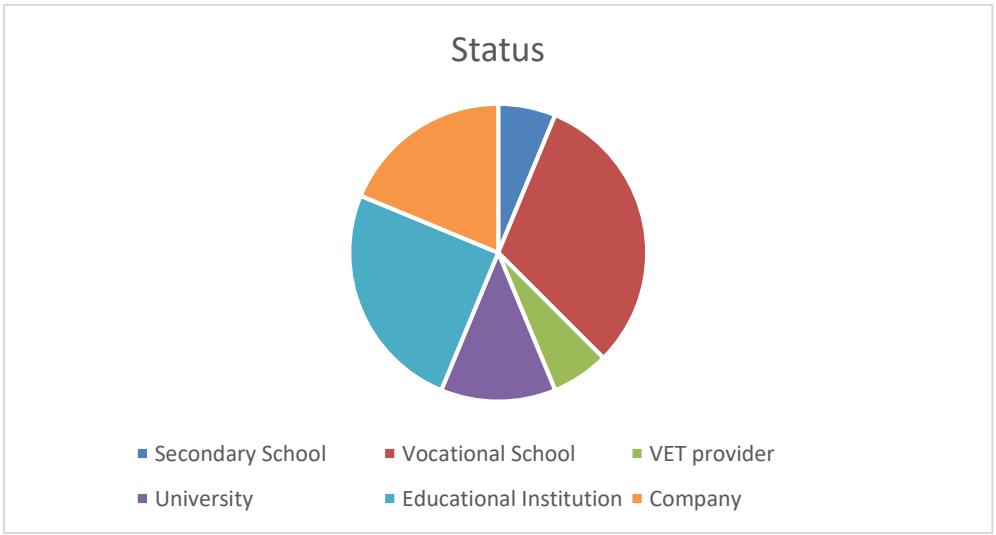
From the 96 participants 42 of them (44%) were trainers/teachers, 24 of them (25%) were students/learners, 6 of them (6%) were staff members of the Human Resources, management, 6 of them (6%) were business/company owners, 12 of them (13%) were Educational and Career Counselors and 6 of them (6%) declared other.



When asked where they work, 6 participants (6%) replied in a Secondary school, 30 participants (31%) replied in a Vocational school, 6 participants (6%) replied as VET providers, 12 participants (13%) replied at a university, 24 participants (25%) replied in an Educational Institution and 18 participants (19%) replied at a company.



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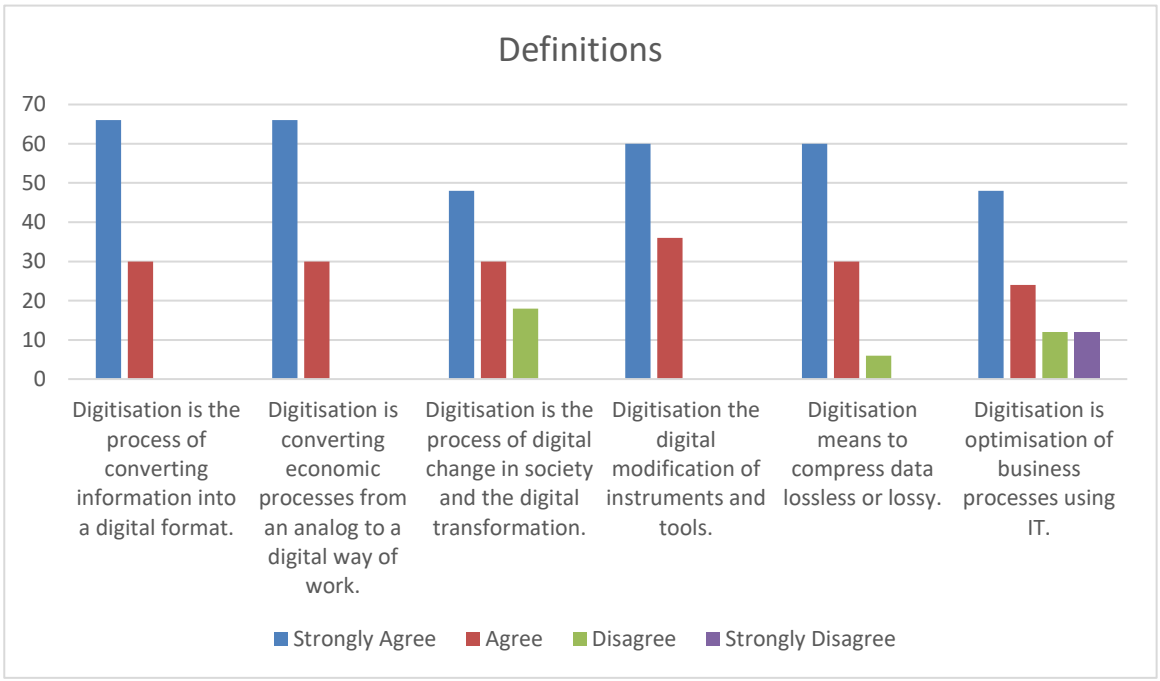
Estimations about digitization and industry 4.0

We then asked if the participants agreed with the following statements regarding definitions of Digitisation and the results were:
Regarding digitisation being the process of converting information into a digital (i.e. computer-readable) format and digitisation being the process of converting economic processes from an analog to a digital way of work 66 participants Strongly Agreed and 30 participants agreed.

About, digitisation being the process of digital change in society and the digital transformation which is recognized as the digital revolution 48 participants Strongly agreed, 30 participants Agreed and 18 participants Disagreed. Regarding digitisation being the digital modification of instruments and tools 60 participants Strongly agreed and 36 participants Agreed. When asked if they agreed that digitisation means to compress data lossless, 60 participants Strongly Agreed, 30 participants Agreed and 6 participants disagreed. And finally when asked whether digitisation means optimisation of Business processes using information technology 48 participants Strongly Agreed, 24 Agreed, 12 Disagreed and 12 Strongly Disagreed.



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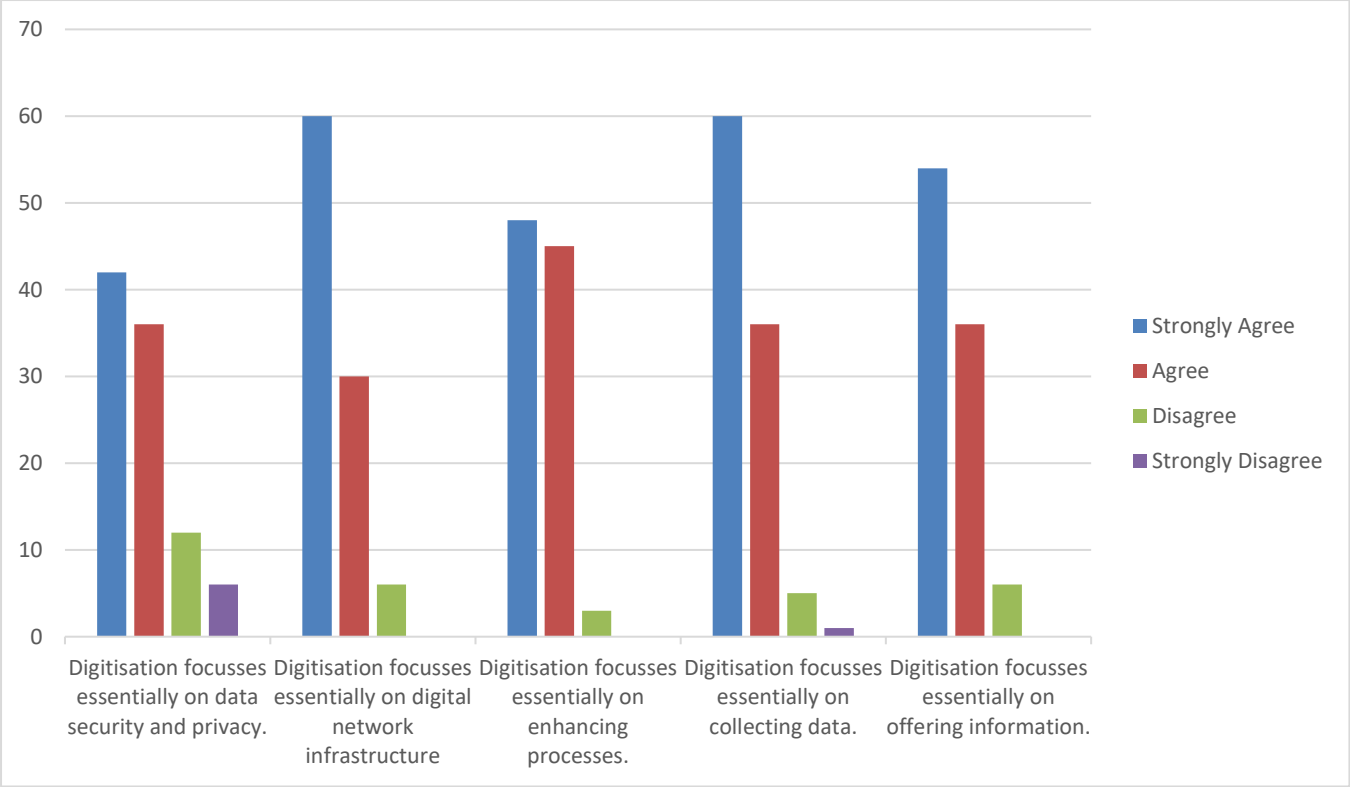
When asked about digitisation focusing essentially on data security and privacy 42 participants responded that they Strongly Agree, 36 participants that they Agree, 12 participants Disagreed and 6 participants Strongly Disagreed. Regarding digitisation focusing essentially on digital network infrastructure 60 participants agreed, 30 Agreed and 6 Disagreed. Regarding digitisation focusing essentially on enhancing processes 48 participants replied that they Strongly Agreed, 45 Agreed and 3 Disagreed. When asked if they believed that digitisation focusses essentially on collecting data 60 participants Strongly Agreed, 30 Agreed, 5 Disagreed and 1 participant Strongly Disagreed. And finally, regarding digitisation focusses essentially on offering information 54 participants Strongly Agreed, 36 participants Agreed and 6 participants Disagreed.



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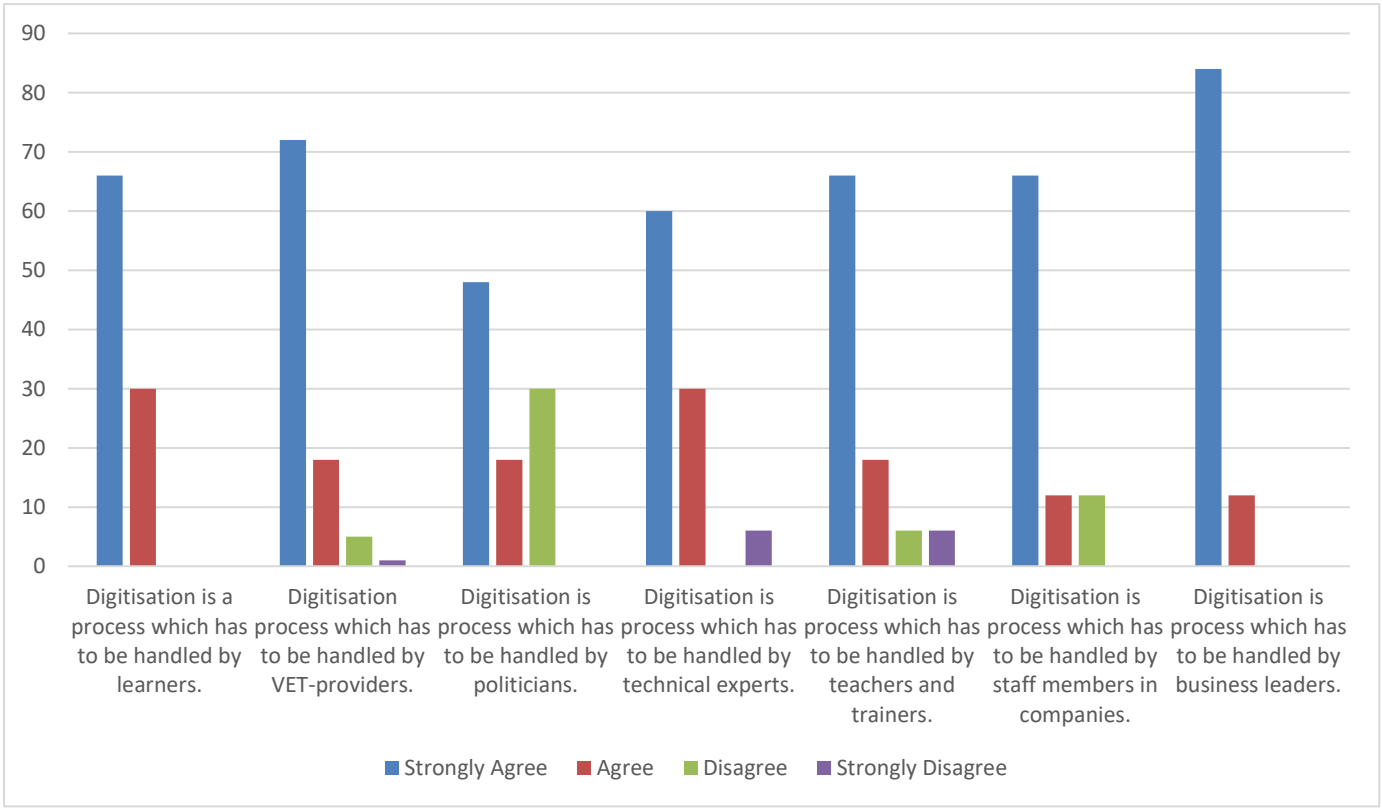
The participants where then asked if they agreed with the following statements about the persons or groups which have to handle digitization. All participants agreed that digitization is a process which has to be handled by learners as 66 participants Strongly Agreed and 30 participants Agreed. When asked if this is process which has to be handled by VET-providers 72 participants Strongly Agreed, 18 Agreed, 5 Disagreed and 1 participant Strongly Disagreed. Regarding digitisation being a process which has to be handled by politicians 48 participants Strongly Agreed, 18 participants Agreed and 30 participants disagreed. Whether is it a process handled by technical experts 60 participants Strongly Agreed, 30 participants Agreed and 6 participants Strongly Disagreed. About it being handled by teachers and trainers 66 participants Strongly Agreed, 18 participants Agreed, 6 participants Disagreed and 6 participants Strongly Disagreed. Regarding it being handled by staff members in companies 66 participants Strongly Agreed, 12 participants Agreed and 12 Participants Disagreed. And finally, when asked if digitization is a process handled by business leaders 84 participants Strongly Agreed and 12 participants Agreed.



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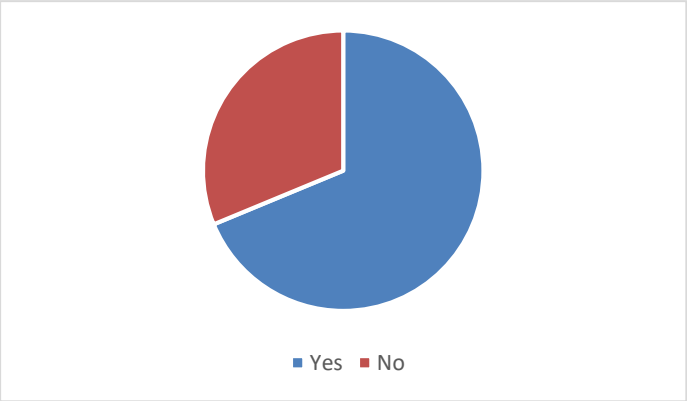
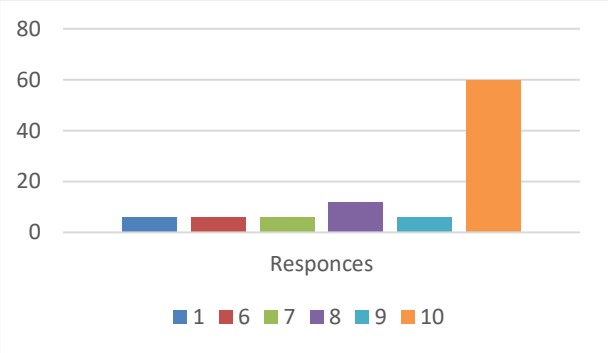
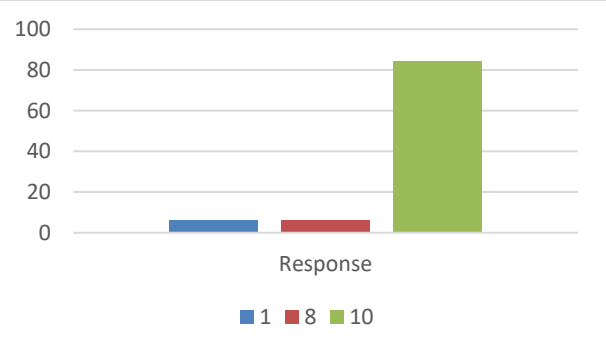
The participants were then asked if they were familiar with the term Industry 4.0, 66 participants (69%) replied Yes and 30 participants (31%) replied No.



The participants were then asked to rate from a scale of 1-10 (1 – unimportant to 10 - important), how important digitisation is today. 6 participants rated it with 1,6,7 and 9. 12 participants rated it as 8 and 60 participants rated it as 10 (important).



The participants were then asked to rate from a scale of 1-10 (1 – unimportant to 10 - important), how important digitisation will be in 5 years. 6 participants rated it with 1, and 8. 84 participants rated it as 10 (important).



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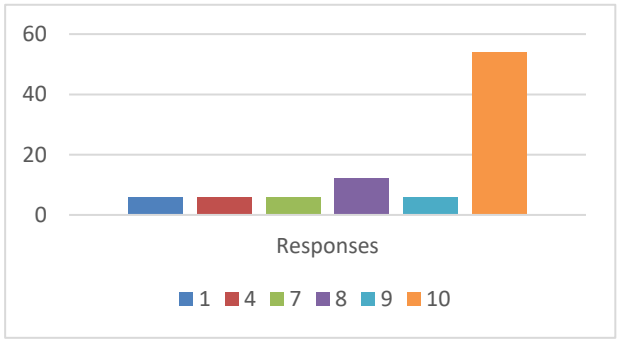
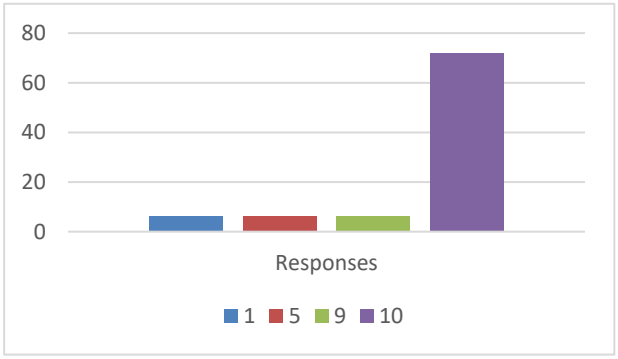
The participants were then asked to rate from a scale of 1-10 (1 – unimportant to 10 - important), how important the change is concerning industry 4.0. 6 participants rated it with 1,4,7 and 9. 12 participants rated it as 8 and 54 participants rated it as 10 (important).



The participants were then asked to rate from a scale of 1-10 (1 – unimportant to 10 - important), how important the change will be concerning industry 4.0 in five years. 6 participants rated it with 1, 5 and 9 respectively. 72 participants rated it as 10 (important).



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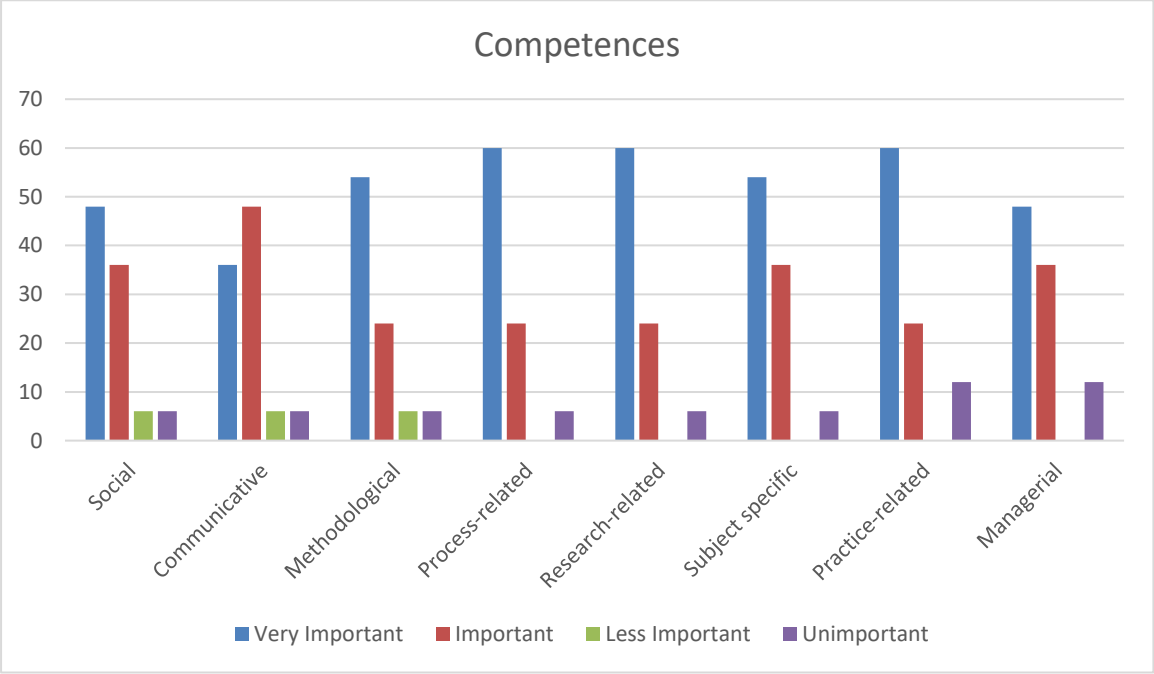
The participants were then asked which of the following competences are important for the digital change in society/industry 4.0. In terms of social competences 48 participants agreed that they are very important, 36 participants agreed that they are important and 12 participants thought they were less important and Unimportant (6 each respectively). In terms of communicative competences, 48 participants agreed that they are very important, 48 participants that they are important and 12 participants thought they were less important and Unimportant (6 each respectively). In terms of Methodological competences 54 participants replied they are very important, 24 participants replied they are important and 12 participants thought they were less important and Unimportant (6 each respectively). Regarding process-related competences 60 participants answered that they are very important, 24 as important and 6 as unimportant. About research-related competences 60 participants answered that they are very important, 24 as important and 6 as unimportant. Regarding subject specific competences, 54 participants replied as very important, 36 as important and 6 as unimportant. In terms of practice-related competences, 60 participants replied as very important, 24 as important and 12 as unimportant. And finally, regarding managerial competences, 48 participants answered that they are very important, 36 as important and 12 as unimportant.



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The participants were then asked which of the following skills are important for the digital change in society/industry 4.0. For Basic IT skills 78 participants replied very important, 8 participants replied important, 4 replied less important and 6 participants unimportant. For deep IT skills, 84 participants replied very important, 7 participants replied important and 5 participants unimportant. For technical skills 66 participants replied very important, 18 participants replied important, 5 replied less important and 7 participants unimportant. For organizational skills 72 participants replied very important, 12 participants replied important, 9 replied less important and 3 participants unimportant. In terms for applying theoretical knowledge 66 participants replied very important, 18 participants replied important, 6 replied less important and 6 participants unimportant. Regarding self-awareness and self-management 60 participants replied very important, 18 participants replied important, 6 replied less important and 12 participants unimportant. For leadership skills 60 participants replied very important, 18 participants replied important, 6 replied less important and 12 participants unimportant. For team working 78 participants replied very important, participants replied important and 12 participants unimportant. Regarding planning skills, 60 participants replied very important, 18 participants replied important, 12 replied less important and 6 participants unimportant. For implementation skills, 60 participants replied very important, 24 participants replied important, 6 replied less important and 6 participants unimportant. In terms of evaluation skills 60 participants replied very important, 24 participants replied important and 12 participants unimportant. Regarding ethical skills 54 participants replied very important, 30 participants replied important, 2 replied less important and 10 participants unimportant. In terms of problem solving skills 72 participants replied very important, 18 participants replied important, 4 replied less important and 2 participants unimportant. For decision making skills 60 participants replied very important, 24 participants replied important, 5 replied less important and 7 participants unimportant. For data analysis skills 60 participants replied very important, 18 participants replied important, 6 replied less important and 12 participants unimportant. For flexibility skills 66 participants replied very important, 18 participants replied important and 12 participants unimportant. And finally for patience 72 participants replied very important, 10 participants replied important, 2 replied less important and 12 participants unimportant.

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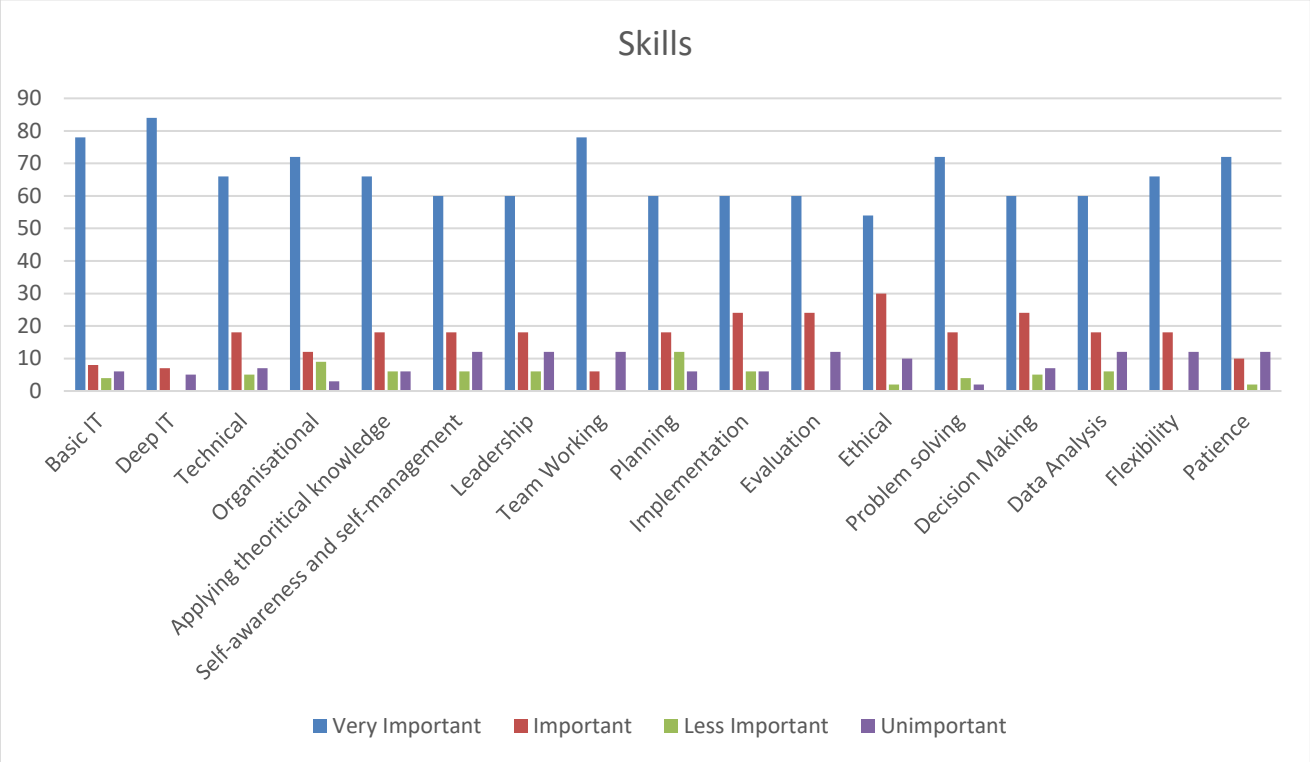
To sum up, all skills are considered very important especially Deep IT skills, followed by Basic IT, team working, problem solving and patience.



We then asked our participants to tell us their opinion on ditigitisation currently, on a scale of 1 to 6 (1 being important and 6 being unimportant) the results are:
In terms of it being important, it was on the high end of the rating as 48 participants rated it with 1, 24 participants rated it with 2 and 12 participants with 3 and 6. In regards with it being interesting, 36 participants rated it with 1 & 2, 6 participants with 3 and 18 as uninteresting. In terms with it being motivating 42 participants ranked it with 1, 24 participants ranked it with 2, 12 participants ranked it as 3 and 6 participants rated it with 4,5,6 respectively. Regarding it being fun, 30 participants rated it with 1, 12 participants with 2, 24 participants with 3 and 12 participants rated it with 5 & 6 respectively. In terms of it being innovative, 48 participants replied with 1, 18 participants replied with 2 & 3 respectively and 6 participants replied with 4. Regarding it being helpful, 42 participants replied with 1, 24 participants with 4, 12 participants with 3 and 18 participants with 6. When asked to rank digitization as it being useful, 54 participants answered 1, 24 participants replied 2, 6 participants replied with 3 and 12 participants with 6. Regarding it being necessary, 54 participants replied with 1, 18 participants with 2, 12 participants with 3, 5 participants with 5 and 7 participants with 6. For it being easy to use in teaching 24 participants replied with 1, 18 participants replied with 2, 24 participants replied with 3, 12 participants replied with 4 and 18 replied with 6. And finally regarding it being easy to use in learning, 24 participants replied with 1 & 2 respectively, 18 participants replied with 3, 12 participants replied with 4 & 6 respectively and 6 participants replied with 5.
To sum up, the highest ranking in the participants' opinion are that digitization is necessary, useful, important, motivating, innovative and interesting but the lowest ranking are fun, easy to use in teaching and easy to use in learning.

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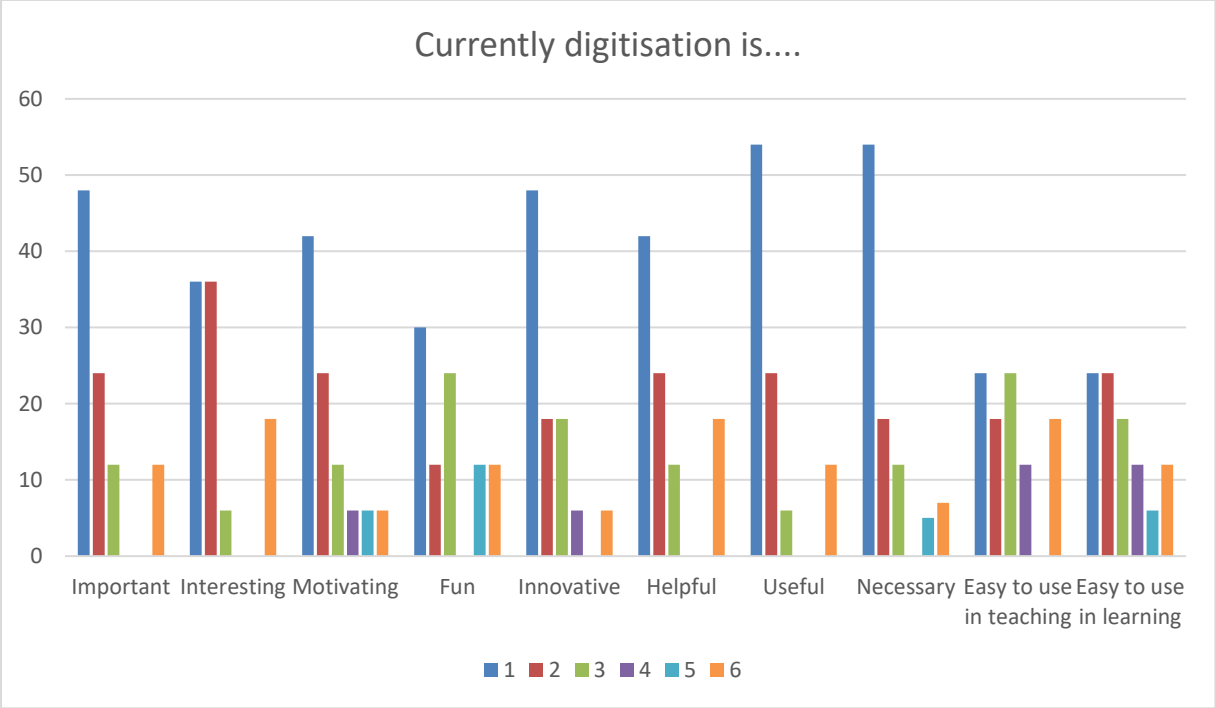

We then asked our participants to tell us their opinion on how ditigitisation will be in 5 years, on a scale of 1 to 6 (1 being important and 6 being unimportant) the results are:
In terms of it being important, it was on the high end of the rating as 60 participants rated it with 1, 18 participants rated it with 2 and 6 participants with 3 and 12 participants replied with 6. In regards with it being interesting, 60 participants rated it with 1, 18 participants ranked it with 2, 6 participants with 3 and 12 as uninteresting with 6. In terms with it being motivating 54 participants ranked it with 1, 12 participants ranked it with 2, 18 participants ranked it as 3 and 12 participants rated it with 6. Regarding it being fun, 54 participants rated it with 1, 6 participants with 2, 12 participants with 3, 6 participants with 5 and 12 participants rated it with 6. In terms of it being innovative, 54 participants replied with 1, 12 participants replied with 2, 18 participants with 3 and 6 participants replied with 4 & 6 respectively. Regarding it being helpful, 54 participants replied with 1, 12 participants with 2 & 3 respectively and 6 participants with 5 & 6 respectively. When asked to rank digitization as it being useful, 60 participants answered 1, 12 participants replied 2, 6 participants replied with 3, 4,5 & 6 respectively. Regarding it being necessary, 60 participants replied with 1, 18 participants with 2, 6 participants with 3 & 4 respectively, 4 participants with 5 and 2 participants with 6. For it being easy to use in teaching 42 participants replied with 1, 18 participants replied with 2 & 3 respectively, 6 participants replied with 5 and 12 replied with 6. And finally regarding it being easy to use in learning, 42 participants replied with 1, 18 participants replied with 2 & 3 respectively and 18 participants replied with 6.
To sum up, the highest ranking in the participants' opinion are that digitization is necessary, useful, important and interesting but the lowest ranking are fun, easy to use in teaching and easy to use in learning, but the numbers are higher than the ratings on the current situation of digitization.

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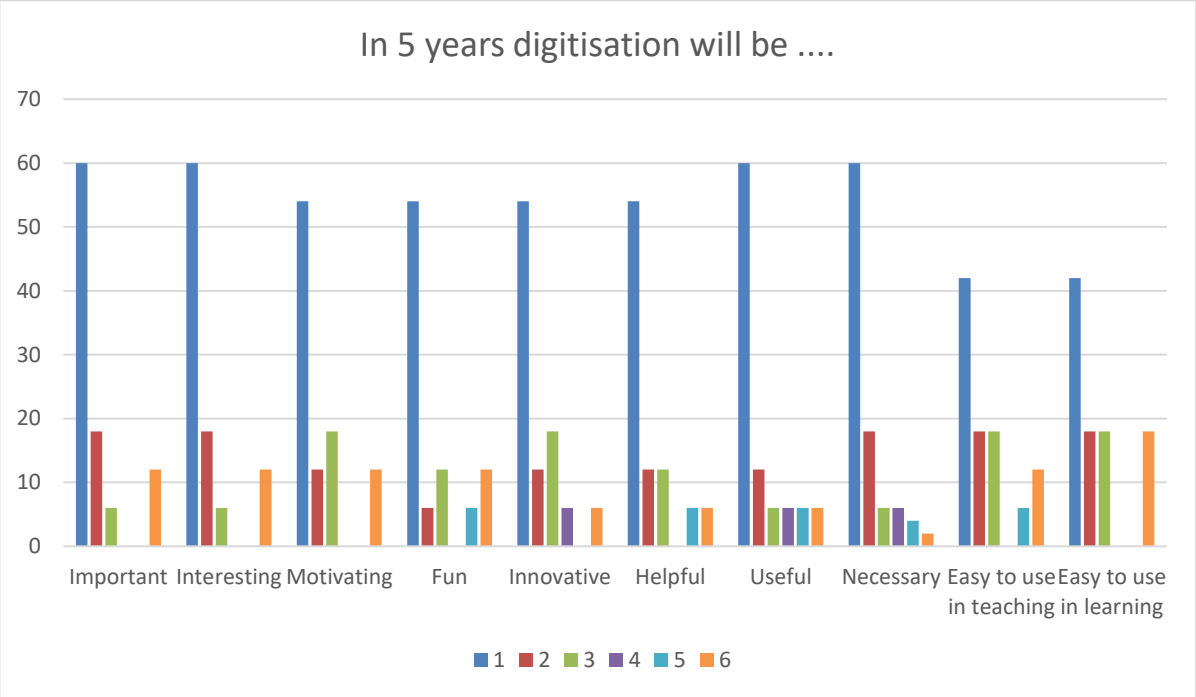
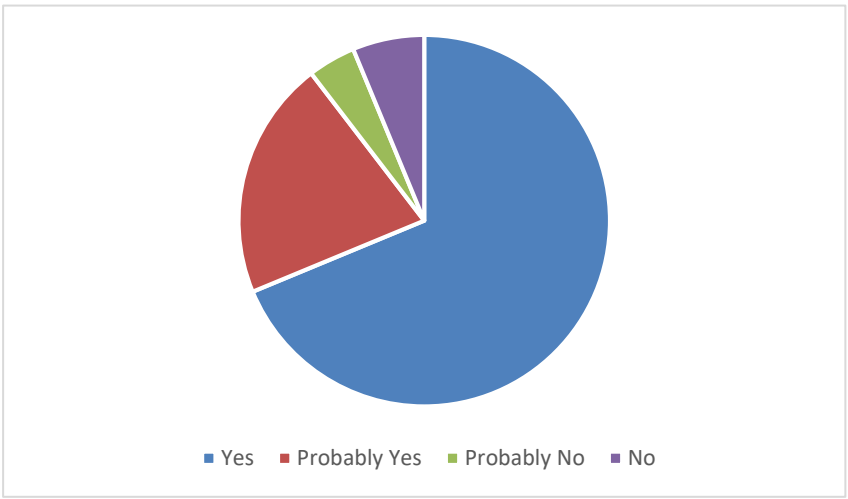


The participants were then asked if their VET teachers and VET trainers should support their students with digitisation to foster their learning processes. 66 participants (69%) replied Yes, 20 participants (21%) replied probably Yes, 4 participants (4%) replied probably No and 6 participants (6%) replied No.



Opportunities and Challenges

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Finally, we asked our participants what they believed the opportunities of digitisation and Industry 4.0 are and most answers were that the potential was unlimited. That mass production could grow even faster and easier than now and the entire industrial sector would run only on digital data.

When asked what the challenges were of digitisation and Industry 4.0, the most popular answer was financial. Another challenge would be in educating people who do not have a technological background to handle the new sophisticated machinery and also a number of participants expressed a worry that unemployed might rise as machines could replace the human factor.

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Conclusion

In conclusion to the above, there is a major gap in the Cypriot market regarding digitisation and Industry 4.0. The majority of the participants strongly agreed that digitisation is the process of converting information into a digital format and that it converts economic processes from an analog to a digital way of work. The majority also strongly agrees that it focuses essentially on digital Network infrastructure and on collecting data. Another point worth mentioning is that they believe that the groups that should handle digitisation are business leaders, VET providers and learners. Whereas the lowest group of handlers should be politicians according to the answers of our participants. Although 31% of our participants were not aware of the term Industry 4.0, a big number answered that they believed it was very important and the change it is bringing to today's market.

In terms of the skills which the participants felt were the most important for the digital change in society with Industry 4.0, the most popular answers were deep IT skills, followed by basic IT skills, team working, problem solving and patience, surprisingly the lowest scores were for Ethical skills and self-awareness & self-management skills. When asked their opinion on the current situation of digitization the highest ratings were for digitization being necessary, important, motivating, innovating and interesting, but the lowest were fun, easy to use in teaching and easy to use in learning. The gap was underlined even more when asked if VET teachers and VET trainers should support digitization to foster their learning process with more than half of the participants replying yes.

Finally, when it comes to the opportunities offered by digitization and Industry 4.0, the majority believed that the potential was unlimited. That mass production could grow even faster and easier than now and the entire industrial sector would run only on digital data. In terms of the challenges of digitisation and Industry 4.0, the most popular answer was financial challenges. As Cyprus has a small economy, not all businesses can convert to digitisation and automation, but they could partially be part of it. Another challenge would be in educating people who do not have a technological background to handle the new sophisticated machinery and also a number of participants expressed a worry that unemployed might rise as machines could replace the human factor.

During the last few years, and especially after the major financial recession of 2013, the manufacturing industry has been facing competitiveness problems, mainly due to its low volume of manufacturing exports and its "traditional" production processes.

According to the statistical service of Cyprus and the Global Competitiveness Report, Cyprus is below the EU average (55th out of 137 countries) as the Industry suffers from deindustrialisation, poor performance and limited improvement. In order to catch up with the global market, the Cypriot government intends to focus on improving the entrepreneurial and industrial infrastructure of the island. The objective is to create a supportive ecosystem, in which businesses can collaborate and interact with each other through a group of stakeholders, like other businesses, the state, the academic community, the RPF (Research Promotion Foundation) and investors.