



Intelligent printing, flexible and organic electronics Excellence

D2.1 Surveys questions and format/interviews guidelines

Document information	
Project number	101143955
Contractual deadline	31/07/2024
Dissemination Level	PU - Public
Nature	R – Document, report
Author	AVO
Contributors	-
Reviewer	OES



Co-funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

© 2024 INFINITE Consortium Partners. All rights reserved.



Co-funded by
the European Union

Change log

VERSION	DESCRIPTION OF CHANGE
V0.1	First draft to be reviewed by OES

Executive Summary

The INFINITE consortium agreed on three target groups for interviews and survey. First group are people related to VET like teachers, trainers, head of VET institutions and alike. Second group are skilled workers, specialists, technicians and alike (individual perspective). The third group are people who have responsibility workers and other people like head of company or department or HR. Furthermore, the INFINITE consortium agreed on the following sets of questions for the three interview guidelines and three sets for surveys.

For the interview guidelines, there is a general part and a country specific part. As the general part is used for transnational comparison, the country specific part can be chosen individually by every partner and account for differences in every country. The country specific part is not fixed and can be adjusted as needed especially after the first interviews have been done and the need for some other or more questions arose. Therefore, some partners have chosen to use only the general part for the first interviews as it reflects what is most important and they don't see the need for country specific questions yet (partners from Finland and Latvia). Others have chosen a set of country specific questions but reserve to adjust them later on as needed (Germany and Spain).

Table of Contents

Change log	2
Executive Summary	3
1. Introduction	4
2. Results	5
Interview Guideline I (group: VET providers)	5
Interview Guideline II (group: skilled workers, specialists, technicians)	7
Interview Guideline III (group: responsibility for workers and other people).....	9
Survey Questions I (group: VET providers).....	10
Survey Questions II (group: skilled workers, specialists, technicians).....	12
Survey Questions III (group: responsibility for workers and other people)	14
3. Conclusion	16
4. DEGREE OF PROGRESS.....	16

1. Introduction

Within the project INFINITE WP2 is dedicated to “Identification of current and future skills demanded by European industry”. Objectives of this work package is to prepare 3 different surveys to collect relevant information of the State of the Art of VET centers and companies and furthermore to carry out interviews. Therefore, interview guidelines have been prepared as well to do so. All questions are meant to be used for an analysis of skill gaps and future skills of European companies (D2.2 and D2.3). Furthermore, the results of the surveys and interviews are basis for other work packages or strongly connected, namely work package 3 “Developing innovative Curricula for VET and learning materials and methodologies” and work package 5 “Cooperation and Partnership”.

The survey and interview questions are a direct result of task 2.1. First, the partners agreed on three target groups. First group are people related to VET like teachers, trainers, head of VET institutions and alike. Second group are skilled workers, specialists, technicians and alike (individual perspective). The third group are people who have responsibility workers and other people like head of company or department or HR. Afterwards all partners contributed sets of questions which are most important to them. In a second step, they have been compared to each other and a consensus of some questions has been identified. With this consensus and additional questions suited best to aid other objectives of the project, suggestions have been put up for discussion. As a result of the discussion, all partners have agreed on three sets of questions for interview guidelines and three sets of survey questions. The interview guidelines split up into a general part (for transnational comparison) and a country specific part. The second is completely adjustable by the individual partners and optional. The partners from Finland and Latvia have chosen to start with the general part and add country specific questions afterwards. Germany and Spain have chosen to already start with some individual questions and reserve to adjust them afterwards if necessary.

GA: T2.1; Core definition of Surveys:



At least 3 different surveys will be developed (one for Task 2.2 and one for Task 3.3) based in Finland industrial Roadmapping and CLOU Project. The definition of survey questions in regard to current portfolio, future needed skills and work packages of the project will be carried out. Furthermore, consolidation of European curricula standards, the perspectives of VET providers and SMEs will be also considered. Participation of all partners in periodic online meetings (high frequency) for discussions is expected. The following methodology will be implemented: (1) interviews and (2) surveys launch to increase the rate of answers. The number of surveys depends on the number of target groups: teachers, trainers (Task 2.2) and companies as the target group or of specific people of the companies (Task 2.3). Target group “company” could be split into trainees, skilled workers, trainers, HR and managers. At least 3 different target groups will be considered. Surveys should cover business, product design and manufacturing needs and most importantly the current and future HR and expertise improvement needs. The survey should also find the answer to the question of what the level of expertise of the teachers and trainers now is and what improvements are required. It is expected to have one main interview guideline for trainers in companies (Task 2.3) as well as the teachers of VET providers and similar facilities (Task 2.2). This guideline splits into a general part and a country-specific part. It is expected between 1 to 4 guidelines.

2. Results

Interview Guideline I (group: VET providers)

- Used for doing interviews as part of WP2 and more specific T2.2
- Length of the general part is meant to be 20 minutes
- Length of the country specific part is meant to be 10 minutes
- Country specific questions can be included at any point of the guideline and do not have to be asked after the general part

General Part (20 minutes)

Breaking the Ice

1. What are your main sectors you are training people/ working in?
 - a. Is it related to PFOE?
2. What are the primary challenges you currently face in your day-to-day operations?

Current Situation of VET

3. Which trainings do you offer as a VET provider/institute/school?
4. Do you already have curricula related to PFOE?
 - a. If so, related to which part of PFOE?
 - b. If not, can you imagine implementing these topics?
 - i. If so, related to which part of PFOE?
5. What additional resources or training would be necessary to implement a PFOE curricula/training?
 - a. Resources of teachers/trainers (time, knowledge, skills, ...)
 - b. Resources in your VET institution/university (people, technology, ...)

6. Where do you get your input for your curriculum? How do you stay up to date?

Development of new Programs

7. What specific skills and knowledge are currently most valuable in your sectors?
8. Are there any skills or areas of expertise that are lacking in the current workforce of your sectors?
9. What are the key skills and knowledge you consider necessary to succeed in the field of PFOE?
10. What changes do you anticipate in education in the next 5 to 10 years?
 - a. How do you foresee the demand for different skills (hard & soft) evolving in response to these changes?
 - b. What changes or improvements would you like to implement in the training programs to better prepare students for future demands in the sectors?
11. What are the biggest challenges and opportunities you anticipate for your organization?
 - a. How is your organization planning to address these future challenges?
 - b. What topics has your company identified for future development?
 - c. What of it is related/ could be related to PFOE?

Interaction between VET and industry

12. How does your organization currently interact with companies?
 - a. Are there ongoing partnerships or collaborations that have been beneficial?
 - b. What improvements would you like to see in the interaction between industry and education providers?
 - c. Are there specific tools or methods you believe could facilitate better collaboration?
13. Would you be interested in training (your) teachers in the field of PFOE in companies?
14. Do you think the companies you are working with would be interested in hosting VET students for internships?

Ending

15. We have now talked about a lot of topics. Which of these was most important to you?
16. Is there anything else you would like to add that we have not covered regarding the needs and future directions of education?

Country Specific Part

Spain

- What economic possibilities do you have at the center for the implementation of training in FLEXIBLE PRINTED ELECTRONICS?

- Do you think training in flexible and organic printed electronics is necessary at your center?
- Do you have the possibility to make those changes?
- How do you think the Spanish education system influences the possibility of developing new curricula?
- What is your degree of influence in generating the curricula you teach?
- How do you consider that training in FLEXIBLE PRINTED ELECTRONICS should be implemented? In intermediate, higher, specialization courses, etc...?
- Do you think the companies you work with would be interested in receiving vocational training students for internships related to FLEXIBLE AND ORGANIC PRINTED ELECTRONICS?
- Do you have training proposals from the companies? What type of training?

Germany

- Do you think PFOE could change the nature of certain job roles in the future?
- What challenges do you think need to be overcome for PFOE to become a more widely adopted technology in your industry?
- What prior knowledge do the trainees bring to the apprenticeship?
 - Is that sufficient?
 - Do you see the need for recapitulation of school knowledge, especially in math and physics?
- What additional qualifications could you envision for the trainees?
- How well is the current cooperation with your associated VET school(s)?
 - How do you think the cooperation could be strengthened or how could you start building up a relationship?

Finland and Latvia

- The VET providers of the INFINITE consortium from Finland and Latvia have chosen to do the first interviews without a country specific part.

Interview Guideline II (group: skilled workers, specialists, technicians)

- Used for doing interviews as part of WP2 and more specific T2.3
- Length of the general part is meant to be 20 minutes
- Length of the country specific part is meant to be 10 minutes
- Country specific questions can be included at any point of the guideline and do not have to be asked after the general part
- # is not meant as a question on its own but to give a hint, in which directions the related question can be asked

General Part (20 minutes)

Breaking the Ice

1. What are the main sectors your company is working in?
 - a. Is it related to PFOE?
2. What are the primary challenges you currently face in your day-to-day operations?

3. What technologies are currently most relevant for your company?
 - a. If active in PFOE sector, specify in this direction as well.

Current Situation as a Skilled Worker

4. What specific skills and knowledge are currently most valuable in your company/industry?
5. What type of training or education have you received to perform your duties in your field?
 - a. Where did you receive this training?
not only degree related, certificates and even training in the own company without certificate are important aspects
6. What aspects of PFOE do you find most interesting or exciting?
7. Have you had any experience working with PFOE in your company?
 - a. If yes – what kind of experience?
8. What are the key skills and knowledge you consider necessary to succeed in the field of PFOE?
 - a. What prior training do you believe trainees/students should have before a training in PFOE?
 - b. What professional profile do you think is most suitable for working in PFOE?

Expectations of the future

9. Have you seen any emerging trends or recent developments in the field of PFOE that catch your attention?
 - a. Do you believe there is a growing demand for skills in the PFOE sector?
10. What are the biggest challenges and opportunities your company anticipates?
 - a. How is your organization planning to address these future challenges?
 - b. What topics has your company identified for future development?
 - c. What of it is related/ could be related to PFOE?

Interaction between VET and industry

11. How does your organization currently interact with educational institutions?
 - a. Are there ongoing partnerships or collaborations that have been beneficial?
12. Are there specific tools or methods you believe which could facilitate better collaboration?
13. What improvements would you like to see in the interaction between industry and education providers?

Ending

14. We have now talked about a lot of topics. Which of these was most important to you?
15. Is there anything else you would like to add that we have not covered regarding the needs and future directions of education?

Country Specific Part

- The industry representatives of the INFINITE consortium have chosen to do the first interviews without a country specific part.

Interview Guideline III (group: responsibility for workers and other people)

- Used for doing interviews as part of WP2 and more specific T2.3
- Length of the general part is meant to be 20 minutes
- Length of the country specific part is meant to be 10 minutes
- Country specific questions can be included at any point of the guideline and do not have to be asked after the general part
- # is not meant as a question on its own but to give a hint, in which directions the related question can be asked

General Part (20 minutes)

Breaking the Ice

1. What are the main sectors your company is working in?
 - a. Is it related to PFOE?
2. What are the primary challenges you currently face in your day-to-day operations?
3. What technologies are currently most relevant for your company?
 - a. If active in PFOE sector, specify in this direction as well.

Current Situation in Company

4. What specific skills and knowledge are currently most valuable in your company/industry?
 - a. Are there any skills or areas of expertise that are lacking in your current workforce?
5. What type of training or education have your workers received to perform the duties in your company?
 - a. Where did they receive this training?
not only degree related, certificates and even training in the own company without certificate are important aspects
6. What are the key skills and knowledge you consider necessary to succeed in the field of PFOE?
 - a. What prior training do you believe trainees/students should have before a training in PFOE?
 - b. What professional profile do you think is most suitable for working in PFOE?
7. What is your opinion on the importance of PFOE in the current industry and market context?

Expectations of the future

8. Have you seen any emerging trends or recent developments in the field of PFOE that catch your attention?

- a. Do you believe there is a growing demand for skills in the PFOE sector?
9. What are the biggest challenges and opportunities your company anticipates?
 - a. How is your organization planning to address these future challenges?
 - b. What topics has your company identified for future development?
 - c. What of it is related/ could be related to PFOE?

Interaction between VET and industry

10. How does your organization currently interact with educational institutions?
 - a. Are there ongoing partnerships or collaborations that have been beneficial?
11. Are there specific tools or methods you believe which could facilitate better collaboration?
12. What improvements would you like to see in the interaction between industry and education providers?

Ending

13. We have now talked about a lot of topics. Which of these was most important to you?
14. Is there anything else you would like to add that we have not covered regarding the needs and future directions of education?

Country Specific Part

- The industry representatives of the INFINITE consortium have chosen to do the first interviews without a country specific part.

Survey Questions I (group: VET providers)

- Survey questions as part of WP2 and more specific T2.2
 - Length is meant to be 10 minutes
1. What are the main sectors you are training people in?
 - a. electronics
 - b. printing
 - c. laboratory sciences
 - d. materials science
 - e. physics
 - f. automation
 - g. process industry
 - h. other, please specify
free text

multiple choice
 2. What specific skills and knowledge are currently most valuable in your sectors?
free text

3. Where do you get your input for your curriculum? How do you stay up to date?
- conference
 - Please specify which ones (optional or mandatory)
 - workshops
 - Please specify which kind (optional or mandatory)
 - administration (local)
 - administration (national)
 - discussion with colleagues
 - journals, papers
 - please specify (optional or mandatory)
 - discussion/meetings with companies
- # multiple choice
- other, please specify
- # free text
4. Do you already have curricula related to PFOE?
- printed electronics
 - flexible electronics
 - organic electronics
 - not yet, but would be interested in doing so
 - no
- # multiple choice
5. What additional resources or training would be necessary to implement a/additional PFOE curricula/training?
- preparation time of trainers/teachers for development of curricula/trainings
 - knowledge and skills
 - technology/equipment
 - money/funding
 - other, please specify
- # free text
6. Are there any skills (hard or soft) or areas of expertise that are lacking in the current workforce of your sectors?
- no
 - yes, please specify
- # free text
7. What changes or improvements would you like to implement in the training programs to better prepare students for future demands in your sectors?
- #free text
8. What are the key skills and knowledge you consider necessary to succeed in the field of PFOE?
- Coming from PFOE, these are ...
- # free text
- If I would have to guess, these are ...
- # free text
9. Which of the following topics are interesting for your educational institution?
- basics of PFOE
 - practical PFOE (lab course)

- c. printing methods
- d. PFOE materials
- e. PFOE design
- f. PFOE standards
- g. integration /hybrid electronics
- h. laboratory skills
- i. assembly work
- j. material preparation
- k. occupational safety
- l. working in clean room
- m. working in ESD environment
- n. testing, validation and quality control
- o. sustainability
- p. packaging
- q. other, please specify
free text

multiple choice

10. What advantages do you believe a PFOE training program could offer to students/trainees and the community?
free text
11. Do you believe there is a growing demand for skills from the PFOE sector?
a. yes
b. no
c. I don't have enough knowledge of the sector to answer this question
12. Do you want to add something, not addressed in this survey? (Optional)
free text

Survey Questions II (group: skilled workers, specialists, technicians)

1. Which answer characterizes you best?
a. I have responsibility for people/workers like head of company/department or HR. # jump to Survey Questions III
b. I am a specialist, technician, skilled worker (individual perspective). # jump to Survey Questions II
single choice
2. Number of people working in company
a. less than 50
b. between 50 and 249
c. more than 250
single choice
3. What are the main sectors you are working in?
a. electronics
b. printing
c. laboratory sciences
d. materials science
e. physics
f. automation
g. process industry

- h. other, please specify
 - # free text
 - # multiple choice
- 4. What specific skills and knowledge are currently most valuable in your sectors?
 - # free text
- 5. What are the key skills and knowledge you consider necessary to succeed in the field of PFOE?
 - Coming from PFOE, these are ...
 - # free text
 - If I would have to guess, these are ...
 - # free text
- 6. What professional profiles do you think are most suitable for working in PFOE?
 - Coming from PFOE, these are ...
 - # free text
 - If I would have to guess, these are ...
 - # free text
- 7. Which of the following topics are interesting for you?
 - a. basics of PFOE
 - b. practical PFOE (lab course)
 - c. printing methods
 - d. PFOE materials
 - e. PFOE design
 - f. PFOE standards
 - g. integration /hybrid electronics
 - h. laboratory skills
 - i. assembly work
 - j. material preparation
 - k. occupational safety
 - l. working in clean room
 - m. working in ESD environment
 - n. testing, validation and quality control
 - o. sustainability
 - p. packaging
 - q. other, please specify
 - # free text
 - # multiple choice
- 8. Are there any skills (hard or soft) or areas of expertise that you would like to have training in?
 - a. no
 - b. yes, please specify
 - # free text
- 9. What challenges do you think need to be overcome for PFOE to become a more widely adopted technology in your industry?
 - # free text
- 10. Do you believe there is a growing demand for skills from the PFOE sector?
 - a. yes

- b. no
11. Do you want to add something, not addressed in this survey? (Optional)
free text

Survey Questions III (group: responsibility for workers and other people)

1. Which answer characterizes you best?
 - a. I have responsibility for people/workers like head of company/department or HR. # jump to Survey Questions III
 - b. I am a specialist, technician, skilled worker (individual perspective). # jump to Survey Questions II# single choice
2. Number of people working in company
 - a. less than 50
 - b. between 50 and 249
 - c. more than 250
3. What are the main sectors your company is working in?
 - a. medical devices and healthcare
 - b. automotive, transport
 - c. military
 - d. packaging, logistics
 - e. textiles
 - f. energy, photovoltaics
 - g. consumer electronics
 - h. environmental monitoring
 - i. other, please specify# free text
multiple choice
4. What specific skills and knowledge are currently most valuable in your sectors?
free text
5. Are there any skills (hard or soft) or areas of expertise that are lacking in the current workforce of your sectors?
 - a. no
 - b. yes, please specify# free text
6. What are the key skills and knowledge you consider necessary to succeed in the field of PFOE?
 - a. Coming from PFOE, these are ...
free text
 - b. If I would have to guess, these are ...
free text
7. Which of the following topics are interesting for your company?
 - a. basics of PFOE
 - b. practical PFOE (lab course)
 - c. printing methods

- d. PFOE materials
 - e. PFOE design
 - f. PFOE standards
 - g. integration /hybrid electronics
 - h. laboratory skills
 - i. assembly work
 - j. material preparation
 - k. occupational safety
 - l. working in clean room
 - m. working in ESD environment
 - n. testing, validation and quality control
 - o. sustainability
 - p. packaging
 - q. other, please specify
free text
- # multiple choice
8. What type of training/what kind of material matches your needs in further education?
- a. online courses
 - b. hybrid training
 - c. in person training
 - d. degree related training
 - e. certificate related training
 - f. videos
 - g. literature
 - h. PowerPoint-presentations
 - i. handbooks
 - j. hands-on training
 - k. other, please specify
free text
- # multiple choice
9. What specific support would you like to have regarding the organisation of further training?
- a. identification of existing needs
 - b. finding offers
 - c. implementation by inter-company training centres
 - d. other, please specify
free text
 - e. no need for support
10. Do you believe there is a growing demand for skills from the PFOE sector?
- a. yes
 - b. no
11. Do you want to add something, not addressed in this survey? (optional)
- # free text

3. Conclusion

All surveys and interview guidelines have been developed according to the grant agreement and the corresponding deliverable D2.1.

4. DEGREE OF PROGRESS

Due date for D2.1 is 31st of July 2024. Degree of progress is 100%.