

### Deliverable Name

#### GES App Report X: Report Name

<b>Deliverable nr.</b>	O3
<b>Name of Deliverable</b>	User's requirement analysis
<b>Activity</b>	User's requirement analysis
<b>Date of delivery</b>	<b>Contractual:</b> 29-08-2020 <b>Actual:</b> 20-09-2022
<b>Version</b>	Draft <input type="checkbox"/> Final <input type="checkbox"/>
<b>Type of deliverable</b>	Report
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<b>Keyword List</b>	Users' requirement analysis, qualitative research, quantitative research, employability, focus groups, individual interviews

Grant Agreement 2019-1-UK01-KA203-062146  
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## 1. Document revision log

Version	Date	Description	Author
1	03.08.2021	First draft	Lipska et al.
2	22.08.2022	Second draft sent to partners for feedback	Lipska et al.
3	07.09.2022	Feedback from partners	Lipska et al.
4	18.09.2022	Feedback and review from NTNU	Lipska et al.
5	20.09.2022	Final Review/formatting/references	Lipska et al.
Final	27.09.2022	Final output	Lipska et al.

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### 3. Executive Summary

The deliverable of project Intellectual Output no. 3 contains general users' requirement analysis of developed GES App. The main aim of conducted research was to establish if GES App would be useful for stakeholders and to examine what features would be the most desired. In order to achieve this goal, it was crucial to find out the approach potential users presents towards existing apps, that is what they value, what they know about employability and what their needs in the field of employability are. The plan of the requirements analysis was two steps. Firstly, the qualitative analysis with group and individual interviews was conducted. Secondly, quantitative data were collected via on-line survey. The research was conducted simultaneously by all project partners among stakeholders from Scotland, Greece, Norway and Poland.

**Focus groups with students.** In the beginning, focus groups with students were conducted. The results showed that apps usage is natural for students, they have a clear picture of their preferences regarding apps in general and a lot of ideas regarding the app in job seeking and maintaining. Students know about and have experience with employers requirements about skills desired on the labour market but the ways of how they can present their potential and develop their employability skills are less known and more difficult to implement. Students agreed the GES App would be useful in preparing to job application, but they listed some features that would make such an app appealing for them.

**Focus groups with academics.** Academics have noticed that various applications are popular among young people. Therefore, the designed application may become a useful tool for students. According to academics, the app could be helpful in reporting on students' skills and practices. It would provide motivation for development. Among desired features of the app teachers mentioned user-friendly interface, easy-to-use, possibility to create groups and modules with contents, questionnaires for vocational profiling, connection between offers and skills.

**Individual interviews with employers.** The majority of interviewees were people who deal with recruitment on a daily basis or work with students. In expert opinions, the most important app features comprised: CV building, adding job offers, user-friendly, containing teaching materials how to be a good employee, the ability to communicate between users, individual

user profile, the ability to add your own skills and evidence of their possession. Moreover, the application should be available not only to students but also to employers.

**Conclusion.** The results of these preliminary acceptability and user requirements studies suggest that interviewees were sure that the application can be an attractive and useful tool helping students enter the job market. The studies also provided guidance about what the app should be like, and what app features potential users would like to see in the app. Furthermore, knowledge was gained about what students, academics and employers know about GESs and what skills they consider to be the most important. This information has helped to guide the development of the app.

## 4. Introduction

To increase their chances for success in the labour market, students need to develop Graduate Employability Skills (GESs) during their studies. GESs are often defined as practical, transferable, graduate level abilities over and above any specific discipline content. Research has shown that they play an important role in employee recruitment (Boyle et al., 2020). Therefore, to maximise their potential, students should start thinking about their skills, and their relevance for future career options, early in their degree journeys so they can reflect on the importance of these, and identify areas for improvement (Bridgstock, 2009). Also, they need to somehow demonstrate their skills during the recruitment process.

To help students develop and then demonstrate their GESs, a project funded by an ERASMUS+ grant was envisaged. The aim of the project is to develop the GES App that would allow students to plan, record, and evidence the acquisition and development of GESs throughout their university journeys. Over the last 20 years there has been an upsurge of interest in using technology to engage with students and facilitate their learning. Young people use computers and mobile apps on a daily basis—they are an essential part of their everyday life. Apps have the potential to offer methods of learning highly consistent with modern theories of effective learning, which propose that learning activities should be active, situated, problem based, and interactive. It is hoped that the GES App will help to increase students' knowledge on GESs, their awareness of their importance in the labour market, as well as allow them to identify and fill gaps in their skills set, and provide a resource they can use when they leave university and start applying for a job.

### 4.1. The user requirements analysis

The “Developing a Graduate Employability Skills App” project started with a literature review (comparison of different perspectives on GESs), followed by the resource review (similar existing apps and digital resources) and the user requirements analysis occurred. The current deliverable describes the results of the user requirements analysis conducted in four European countries: Poland, United Kingdom, Norway and Greece. It included focus groups with students, focus groups with academics; individual interviews with academics, career counsellors and employers; and a survey of students. All three groups—students, academics, and career counsellors and employers—are potential users of the GES App.



The aim of the user requirement analysis was to investigate the students' and academics' knowledge of and attitudes to GESs, as well as their views on the idea of development of the GES App—whether such an app would be useful and what features would be desirable. It was an opportunity to ask participants if they use any learning and self-development-related apps and how the GES App could help them record and evidence their skills. The advantage of the analysis was to capture perspectives of different groups of potential users from different countries. The results from the conducted research are to be used to prepare the next intellectual output of the GES App project, especially while preparing the app content, the app design specification and developing the app itself.

The COVID-19 pandemic started in February 2020, during the early phases of the project. The global situation associated with virus also had a significant impact on the course of the users' requirement analysis. Firstly, as the pandemic started, we decided to postpone the research hoping to conduct them in a face-to-face manner in near future. However, as the situation developed it occurred to be impossible and we implemented an alternative approach. All research was carried out with the usage of virtual tools. In order to collect qualitative data, a platform for on-line meetings was used. The final survey was conducted via the on-line platform. It is worth noting that on-line meetings do not decrease the quality of research and data in general and during the pandemic it was the natural form of communication for everyone.

## 5. Methodology of the study

### 5.1. Design

The user requirements analysis was conducted in two main stages to collect data from different perspectives and by different methods. The first stage was qualitative research with a group of stakeholders and the later was a quantitative survey prepared taking into account conclusions gathered from the first stage. The same procedure and method were implemented by each of the four partners, which gives the opportunity to compare results and draw general conclusions from the whole users' requirements analysis. Usage of various research approaches enables a multi-faceted perspective on the topic, an in-depth analysis of issues related to employability and application functionalities. Taking into account the complicated situation of the COVID-19 pandemic, which the authors had to face during the research preparation, planning and fulfilling, all research was conducted online via digital resources without face-to-face contact.

#### 5.1.1. *Qualitative research*

The first stage of users' requirement analysis constituted individual and group interviews where data were collected in an open-ended way. Focus group are a qualitative research method, where the findings rely on the group dynamic and participants interactions. It enables to reach obscure information and encourages thinking out of the box. Individual interviews allow to gather an advanced insights from expert in the particular field, where the one-to-one situation creates space for longer, deep statements. In the case of the GES App project, data about Graduate Employability Skills, as well as usefulness of the application as a tool supporting entry into the labour market and the content the app should contain was checked during the focus groups and individual interviews. The qualitative data was gathered from the perspective of students, academic teachers and employers. Focus groups and individual interviews were used to collect data from students and academics in Poland, Scotland, Norway and Greece. All studies of the same type used the same scenario, that is all partners used the same focus group script, with the same questions and facilitators and the only adjustment was the language. Research in Poland was conducted in Polish, the studies conducted in Greece used Greek language version while research in Scotland and Norway was conducted in English. The instructions and scenarios of this stage of the research are presented in Appendix 1.

### ***5.1.2. Questionnaire***

The second stage of the users' requirement analysis was on-line survey to collect quantitative data regarding desired app functionalities from the perspective of potential users, namely students and graduates. Questionnaires provide more precise measurement of detailed questions with a larger sample. This approach leads to specific numerical data that can be compared with each other to obtain information about which functionalities are more desirable than others. Generally, the survey addressed similar issues to the focus groups and individual interviews, but the questionnaire was distributed to a wider audience in order to provide quantitative evidence about what are desirable features of the app. Questionnaires were used to collect data from students in Poland, Scotland, Greece and Norway. The survey was conducted in English by all partners.

## **5.2. Participants**

In this section the summary of all the participants of the users' requirement analysis is provided. The information includes number of participants, details of the sample and project partner carrying out the study. All focus groups and individual interviews were conducted between November 2020 and February 2021.

In general, eight focus groups with students were carried out. In particular, three focus groups took part in Poland with students from Cardinal Stefan Wyszyński University in Warsaw, two focus groups were conducted at University of the West of Scotland, two focus groups were carried out in Greece with students from University of the Peloponnese and one focus group took part in Norway with participation of the students from Norwegian University of Science and Technology. Additionally, five individual interviews with the same scenario as focus group were conducted in Norway. Four focus groups with academics were conducted, one in each of the partner countries. In general, 13 individual interviews with experts were carried out. Almost all of the interviews concerned employers. Only two were carried out with academic teachers working in career counselling at the university carrier office at Cardinal Stefan Wyszyński University in Warsaw. Participants to qualitative research were recruited on a mixed basis. One of the approaches used included targeted selection of students taking part in particular university courses. Another approach, introduced in Poland for students focused group, was wide recruitment with the usage of university students clubs, on-line advertisement

and recruitment forms fulfilment. Students for focus groups were chosen on the basis of their availability at particular hours, job experience and majors of studies. Selection of experts to interviews was deliberate; moderators contacted the chosen participants on the basis of their experience and job position. The link to the survey was deliberated to a wide range of students on the snowball principle by all partners. Below we present the information about participants of each study.

Table 1

*Summary of samples involved in focus group, individual interviews and survey for the users' requirements analysis*

Partner	Details of sample	Kind of study	Numbers
<b>STAGE 1</b>			
<b>CSWU</b>	3 groups of students	3 focus groups	$n = 3, 4, 5$
<b>UWS</b>	2 groups of students	2 focus groups	$n = 4, 4,$
<b>UoP</b>	2 groups of students	3 focus groups	$n = 5, 5$
<b>NTNU</b>	1 group of students	1 focus group	$n = 5$
<b>NTNU</b>	5 students interviewed separately	5 individual interviews	$n = 5$
<b>Total – focus groups with students</b>			<b><math>N = 43</math></b>
<b>CSWU</b>	1 group of academics	1 focus group	$n = 4$
<b>UWS</b>	1 group of academics	1 focus group	$n = 5$
<b>UoP</b>	1 group of academics	1 focus group	$n = 5$
<b>NTNU</b>	1 group of academics	1 focus group	$n = 5$
<b>Total – focus groups with academics</b>			<b><math>N = 19</math></b>
<b>CSWU</b>	2 individual interviews with employers	2 individual interviews	$n = 2$
<b>CSWU</b>	2 individual interviews with academics	2 individual interviews	$n = 2$
<b>UWS</b>	3 individual interviews with employers	3 individual interviews	$n = 3$
<b>UoP</b>	3 individual interviews with employers	3 individual interviews	$n = 3$
<b>NTNU</b>	3 individual interviews with employers	3 individual interviews	$n = 3$
<b>Total – individual interviews with employers</b>			<b><math>N = 13</math></b>
<b>Total – qualitative research</b>			<b><math>N = 75</math></b>
<b>STAGE 2</b>			
<b>CSWU</b>	individual completion of the on-line questionnaire	questionnaire	$n = 33$



<b>UWS</b>	individual completion of the on-line questionnaire	questionnaire	<i>n</i> = 67
<b>UoP</b>	individual completion of the on-line questionnaire	questionnaire	<i>n</i> = 39
<b>NTNU</b>	individual completion of the on-line questionnaire	questionnaire	<i>n</i> = 8
<b>Others</b>	individual completion of the on-line questionnaire	questionnaire	<i>n</i> = 6
<b>Total – questionnaires with students</b>			<b><i>N</i> = 153</b>
<b>Total – qualitative and quantitative research</b>			<b><i>N</i> = 228</b>

*Note.* CSWU = Cardinal Stefan Wyszyński University in Warsaw. UWS = University of the West of Scotland.

UoP = University of Peloponnese. NTNU = Norwegian University of Science and Technology.

In line with the project proposal, we put efforts to conduct research in a similar way by each partner. As it is shown in Table 1, all kinds of methods: focus groups with students and academics, individual interviews with experts and survey were carried out in four countries: Poland, United Kingdom, Greece and Norway. In qualitative research the number of samples and participants were similar. The biggest discrepancy occurred in the fulfilment of questionnaires. One of the reasons could be the availability of students at university during the period of data collection and their willingness to participate voluntarily in on-line survey.

## 6. Stage 1: Interviews on GESs and app features

### 6.1. Focus groups with students in Poland

#### 6.1.1. Participants and procedure

Three focus groups were carried out with CSWU students in Warsaw. The first group comprised of 4 female students: one 3rd year student of philosophy (undergraduate), two 4<sup>th</sup> year psychology students (long-cycle studies), and one 3<sup>rd</sup> year student majoring in cyberspace (undergraduate). Second group was homogenous and consisted of 6 female students from the second year of psychology. The third group embraced two 3rd year students (male and female) and three 2nd year students (females), all studying psychology.

The information about the survey was cascaded around students by individual contact, that is during university classes, by group e-mails to student, via student groups on Facebook, with the support of the Student Government, and by sending messages to academic teachers with a request to share the information with their students. The invitation contained a link to an online form created for collecting basic information (i.e., degree course, job experience) and contact details. All information were gathered and stored in accordance with recommendation from Personal Data Protection Supervisor at CSWU (Cardinal Stefan Wyszyński University in Warsaw). In the next step, an email was sent to the students with a request to provide their time availability. On the basis of their availability, three focus groups were constituted. The chosen students were contacted and invited to take part in an on-line meeting. Because of the COVID-19 pandemic, both recruitment and focus groups were conducted online. Contact with the participants took place via email. Later, we scheduled focus groups and sent the login details for the online meeting to the invited students. In each focus group, one moderator experienced in conducting qualitative research took part to facilitate discussion, ask questions and lead the meeting. The focus groups interviews were recorded and the transcripts of audio recording were prepared. Each focus group was conducted by the same moderator and on the basis of the same scenario. The language of the meetings was Polish.

#### 6.1.2. Results

##### Students' perspective on their plans and skills

Regarding job plans, participants formulated specific professional plans (e.g., school psychologist, addiction therapist) and plans related to the continuation of education at the next

level of studies (master's studies, doctoral studies) or further development (e.g. psychotherapy, UX designer, sexology). An interesting fact is plan B (work outside the learned profession, e.g., teacher, wedding planner), which may mean readiness to change, flexibility in approach to future work.

The catalogue of skills necessary to work in the profession in the statements of Polish students was very extensive. Participants mentioned both, skills of a more general nature (useful in every job, e.g. communication skills, teamwork, openness, flexibility) and more specific skills, characteristic for social work / psychologist work (e.g. ability to listen carefully, sensitivity, attention to the needs of others, awareness of the potential impact on others). The most frequently mentioned skills were: empathy, openness, determination, flexibility, communicational skills, team work, awareness of work-live balance importance (*It also seems to me that the ability to separate work from private life is important... I often sympathize with other people more than I should, and it can also be an obstacle in the work of a psychologist. Perhaps too much empathy, so this possibility of separation is surely such a key to success*) and readiness for constant professional development.

Among skills developed at classes, participants mentioned: argumentation skills, critical thinking skills, ability to work in a group (*We have a lot of group work, practically in every class we are divided into groups and we have to do projects together, so I think that here is a lot of emphasis on being prepared to work in a group with other people*), communication skills (rhetorical statements, ability to discuss), self-presentation and use of CV creators. Participants also indicated some gaps: *no obligatory classes aimed at development of such skills, no training in CV development; students use templates from the Internet and no training in job interviews.*

#### Knowledge of, and attitudes to GESs

When describing the situation in the labour market, participants drew attention to the changes related to the COVID-19 pandemic (fewer job offers, some economy sectors have been shut down, more responsibilities on remote work but *increased demand for psychologists in the labour market, new media market is increasing and now in pandemic makes new possibilities*). Moreover, the students emphasized that studies are not enough to have a good job in the field of psychology and the first job is hard to find because experience is expected everywhere (*Right now I think it's hard because many companies simply went bankrupt due to the pandemic*

*situation. It's even harder to get a job. And when it comes to the psychology job market, I think it is very difficult to get a job when you are a psychologist and only have a master's degree without any additional courses or training or any postgraduate studies).*

Participants mentioned many skills expected by employers, such as: flexibility, teamwork, self-organization, managing the time and tasks, communicational skills, marketing skills, coping with stress, creativity, involvement and enthusiasm, initiative, regularity and willingness to learn new things. Apart from these soft skills, students also mentioned hard skills such as computer skills and knowledge of foreign languages. A recurring category in the interview is also job experience.

In answer to a question “What do you consider as important in applying for a job?” the participants mentioned: professional experience, soft skills – for example, empathy, communication skills, adaptation skills, assertiveness, creativity, perceptivity, negotiating skills, propriety, self-discipline, self-motivation, team-work, critical thinking (*Hmm, I think that soft skills will also be very important, that is, this communication with people. Teamwork, because nowadays you work most often in teams*), standing out from the other candidates, initiative, willingness to constantly learn. In addition, the participants also indicated that employers have too high requirements, especially in comparison to salary.

In relation to the skills needed to maintain employment, the participants mentioned many different characteristics such as flexibility, creativity, openness, ability of self-promotion on the Internet, ability to work under time pressure, ability to adapt to change, commitment to work, diligence, conscientiousness, punctuality, professional upskilling, ability to group work. Also respecting the company rules and understanding the needs and expectations of the employer.

Participants mentioned many different barriers related to job applications. They talked about the external difficulties, such as the lack of information on financial conditions, unsatisfactory employment conditions (i.e. contract of mandate), low salary and currently – COVID-19 pandemic. On the other hand, students indicated internal difficulties related to the attitude of the future employee, such as a lack of experience, a lack of faith in competences, lowered self-esteem, fear of new environment/workplace, inadequate/unrealistic job description or applying for a job without research and knowledge about the company.

In answer to a question “What do you think are the main barriers regarding maintaining employment?” participants pointed to the importance of more personal factors and external



factors related to the relationship with the boss and other workers. The first factors are a mismatch to the team and a lack of skills to work in a group (*Maybe the inability to fit into the team. For people who really have a problem with it and have a job where cooperation is really required, if they do not find themselves among colleagues, I suspect that hardly anyone will want to work with him*), a lack of satisfaction from work, accidents, and pregnancy. The second factors are problems with communication, unclear expectations and task assignment, interpersonal conflicts in the workplace, competition, bad relations with the boss and colleagues, increased employer requirements, nepotism and connections, or even mobbing.

#### Summary of the employability issue

It is worth noting, the participants were students of social studies what is reflected in their statements. Especially students of psychology put emphasis on further education - specializations, courses, academic degrees and that studies are not enough to have good job in the field of psychology.

The most frequently mentioned skills were flexibility and ability to adapt to change as well as other soft skills (e.g., empathy, communication skills, adaptation skills, assertiveness, creativity, negotiating skills, self-discipline, self-motivation, team-work, critical thinking) and various interpersonal skills. The critical importance of job experience was emphasized at multiple points in the interview (*Well, they are definitely looking for people with experience (...) but it is more difficult to get it despite the fact that many students want to go to various things, even unpaid internships, so even when starting their first job employers want professional experience, and not that you worked in some part-time job, in a store, or just in college to make a living*). Moreover, participants noted the importance of hard skills, such as computer skills (MS Office, platforms used for remote communication) and knowledge of foreign languages (also other than English<sup>1</sup>).

#### App features – an exemplary detailed analysis

**Used apps.** All participants are users of many apps and prefers to use them on mobile devices than computers (*And I use the most often when it comes to mobile solutions*). Among the used apps, students mentioned mostly those dedicated to social media, banking apps,

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<sup>1</sup> Note. The focus groups were conducted in Poland where the only official language is Polish. English is the most common and widely known foreign language.

communication, music, movies and education/e-learning (*Applications for communication type Messenger, I use a lot of Instagram. Jakdojade.pl is also very cool to help in moving. MS Teams is used a lot now. Bank application. And I guess that's it*). In the case of self-developmental and education apps, participants listed first of all language learning apps and additionally sport activity app, controlling eating habits, apps with challenges, driving license supporting and facilitating concentration and motivation.

**Features of currently used apps.** In the case of the most valued features of existing apps, students indicated free access, user-friendly manual, simple regulations and privacy policy and comprehensibility (*Everything is clear, I can see keywords instead of long, complicated sentences in the application*). Additionally, students considered it important to have functionality in the apps for communication with others, keeping up with news, a way to spend free time and options like running in the background, saving chosen content, personalization, search engine (*Same with me. For example, this is just such intuitiveness, but I also pay attention to the fact that I like applications that run in the background. When I'm in this app I can do something in the meantime, but I also get some kind of notification if there's any news*).

**A form of employability skills storage and presentation.** In the area of students' ways to keep track of having skills, students highlighted collecting certificates, verification of gained skills in practice or real-life situations, that is at work and testing them at the end of the course (*Well, I think that apart from self-reflection, exams and tests are the tests of our student knowledge. But, however, verification of these skills will be the labour market*). Participants mentioned also additional trainings, feedback of other people and supervisions, comparisons with more advanced colleagues, ease of performing tasks but also a lot of them mentioned self-reflection (*I would add here that I can see the ease with which I can do things. For example, I don't know, sometimes I observe that, for example, I find it easier to use a program or that I am starting to open up more to people*). However, there were also opinions that in reality self-reflection is rare for students (*I think we rarely do such self-reflection, at least I. Just checking what I have actually learned*).

**Skills certificates.** As an evidence of skills, students specify paper certificates, references and contact to real persons, but practice, task fulfilment and performance during interviews were seen as crucial (*Definitely empirical verification, because theoretically, one can write everything in their CV and practice verifies who they are and what they represent*). Participants mentioned also being a part of a science club (i.e. group work skills), usage of professional vocabulary or materials like videos sent during the application process.

**App as a GES certificate.** When asking about the app as a graduate employability skills certification, participants proposed it can help to collect information from different sources in candidate profile in a form of online portfolio (with pictures, videos), containing references from previous employers, a list of skills with the possibility to assess them by student, employer and co-workers. It was considered useful to identify strengths and weaknesses, profession-related tasks for applicants, a set of knowledge and advice (i.e. questions helping applicants to choose type of job, how to write a CV and ML, exemplary tasks, duties at a given position, a training of job interview performance, CV template for printing, a list of potential problems. Students indicated also the app as a communication platform with forums for users and for comparison of oneself with others. Students wanted the app with the possibility to match employers with employees, containing job and training offers also for required skills and search engine. One of the desired features was also possibility to contact a real person, that is tutors or experts who can provide tips and feedback. Generally, students showed doubts regarding the usefulness of the application, if it does not contain attractive functionalities. Issues as the range of personal information required to be shared, free access, presence of big companies, tracking the skills development and gamification features were also mentioned as important in the assessment of the app's usefulness. Students are rather unfamiliar with apps similar to the anticipated GES App. They mentioned polish website [pracuj.pl](http://pracuj.pl) (ang. *you work*), LinkedIn and a platform with advertisements OLX. In the case of potential problems with such an app, participants indicated issue of data security and sharing private information such as copies of certificates.

**Required features of the app.** As a required feature, students mentioned what was said before: matching employers and employees, various account options (i.e. with or without public data), different types of accounts for applicants and employers, check-list of skills and

skills development tracking, possibility to communicate between employers and employees, specific requirements for employers: obligation to post specific requirements and salary offer, provide feedback/decision on the job application. According to students' opinions required frequency in the app should be personalized as well as notification from the app. Students listed some accessibility features: enlarged font, reading job offers, adjusting font colour, dark theme, contrast change, possibility to dictate (instead of typing), voice search. Students had mixed opinions about the usefulness of gamification in the app.

### Summary of app features

Students agreed that the app designed to help them while applying for a job like the GES App, could be useful. They imagined the app as a platform for developing skills (by participating in online courses), and applying for jobs as well as collecting applicants preferences regarding future job and gathering together job offers. They believe that the application should be available in both forms: for the computer and the phone, however they prefer to use it on the mobile devices.

They highlighted the importance of data protection: they would like to have an option to decide how much information about themselves they want to share with a potential employer. The app should have two types of accounts: (a) for employers and (b) for applicants. They would like to mark their skills on a list with the possibility of confirming them by other users - including employers. They would be interested in materials helping them develop missing skills. They imagined a Tinder-like algorithm used to match applicants with employers based on skills marked by applicants and those indicated in job offers as required from a candidate for a particular position.

In the students' opinions, the GES App should not be adjusted to people new on the labour market vs. those with job experience, but it should be adjusted to special needs of people with disabilities, that is the ability to turn on contrast in the application, etc. The app does not need different features for males and females but should adjust grammatical forms to the user's gender (in a flectional language like Polish). Students listed some desired features of the GES App, including dark mode, possibility to search for job offers in a selected area and offline mode, training in the field of an interview, a CV template, a list of problems that they may encounter along with contact with specialists who can help, identification of strengths and weaknesses, the possibility of creating a list of competences to be assessed by employers and

others, forum. Students' views on gamification elements were diversified, which suggest that they should be optional, not obligatory.

Employers would publish job offers with their requirements and position-related duties specified and applicants could apply for a job via this app. They would like to know how many people applied for a given job and to receive any feedback on their job application, even automatically generated. They want job offers to be verified. The application should send notifications with a certain frequency - most often it is once a week. Notifications with new job offers meeting user's expectations would be desirable, but notifications requiring any activity in the app would not. The possibility to adjust the app interface would be desirable. Students do not like commercials and paid options for premium users. In addition, students expect integration with other websites, which would be a tab for offers.

## **6.2. Focus groups with students in Scotland**

### ***6.2.1. Participants and procedure***

Two focus groups were conducted with Scottish students. In the first four students took part: two from UWS, one from Stirling, one from Strathclyde. In the student focus groups 4 females were involved, two of whom study psychology in the 3rd year, one in 3rd year studying sociology and social policy and one 2nd year studying health and life sciences. In the second focus group, four students participated, three female aged 23, 23 and 41 and one male aged 25. Two of them were 4th year psychology students, one 4th year health and life sciences student and one 1st year social work student.

The recruiting for the first focus group was via social media. In the case of the second focus group, participants were recruited from multiple sources, that is posting a volunteer request on the university's Student Union's social media handles, Academic-Student networks. Participant recruitment without any incentive emerged as a challenging aspect of the process, and the pandemic made the process more laborious. Even for this focus group, five students volunteered their participation for the discussion online via Zoom, but one student (male, age 21, 4th year psychology) dropped out within the first 10 minutes of the discussion due to severe connectivity issues at his end. Apart from that, varying sound quality at different participants' ends afflicted the efficiency of the transcription process.

### 6.2.2. Results

#### Students' perspective on their plans and skills

Regarding future professions, participants indicated specific professional plans (e.g. *clinical psychology, educational psychology*) and plans related to the continuation of education. The latter may take the form of a specialization, further academic degrees or additional competences related to the field of study (*When you are in psychology, it's important to specialize... I'd want to do masters in forensics...I think it's like 1-2 years sort of an apprenticeship so that's kind of my plan*). Among skills necessary to work in the profession, participants mentioned communication skills, soft skills, that is listening, empathy, self-motivated, punctuality, professionalism and specialistic skills, that is resilience, patience and understanding. The responses included also skills acquired during internships or work, related to gaining experience and the need for continuous development (*In social work career doesn't stand still and it shouldn't stand still, we should be learning, and experiencing and developing like all the time*). Most of the participants unanimously agreed that their course work did not help their soft skills development. Limited modules of learning regarding employability were mentioned but were termed as more generic and 'helpful to a certain extent'. One participant highlighted extra curriculums help with her skills development more than the coursework (*When it comes to being resilient, something like that I don't think the coursework has helped us, I think psychology students would definitely benefit from a placement*). Participants mentioned also career offices and careers fair.

#### Knowledge of, and attitudes to, GESs

When describing the situation on the labour market, participants drew attention to the changes related to the COVID-19 pandemic and the differences between the city and the countryside (one person said that it was easier to find a job in a small town, but two emphasized that there are more work in big cities). In relation to the skills expected by employers, participants spoke of never-ending, too high expectations, resilience, comprehensiveness. Overall, a negative perception of employers expecting too much emerged across more participants (3:1). What is more, grades holding critical importance were highlighted. (*There so many things they want from us, isn't it? they want everybody to be the best academic degree bachelors and then masters over it, it's just like the list is never-ending...in some things I feel employers actually expect too much of people*).



In the answer to a question “What do you consider as important in applying for a job?” the participants indicated two groups of elements. Firstly, those related to offers from employers/job attractiveness, that is salary, good reputation, services for employees. Secondly, links to individual features needed to find a job. Participants emphasized the need to create the best CV, but also that all CVs are similar to each other and some randomness of the recruitment process. One of the participants pointed out that mentoring and volunteering, available through the careers team, are helpful in building a career (*I am tapping into a lot of the career skills development so if you are not on the careers page, have a look at that and they also have this mentorship and like I know they have had a couple of counsellors and psychologists as mentors so that might be something you might want to tap into sort of to give you an edge*).

In the answer to a question “What are the skills you think you will need to maintain employment?” the participants mentioned many different characteristics such as people skills, time management, hardworking, enthusiasm and teamwork. Also, resilience (physical & mental) emerged as the most crucial skill to keep an employment. Simultaneously participants mentioned many barriers in job application. They talked about the difficulties in looking for a job and preparing an application, such as lack of time (due to current activities and duties), difficulties in looking for offers (too many different sources - *Knowing where to look for those jobs, if they were all in the same place how easy would that be... they are scattered all over the web and you are like ok, where do I start?*) or once again preparing CV distinctive among other. Moreover, the participants noted that the application and interview process is often overwhelming (*I think the application process sometimes can be a bit overwhelming. Yeah, like you have to download and read all this information about the company and the role and what you'll be doing. And then sometimes applications just apply it's. They want you to talk about yourself and what you've done, and this whole massive process*).

In the answer to a question “What do you think are the main barriers regarding maintaining employment?” participants indicated the importance of both, personal factors and external factors related to the relationship with the boss and other workers. The first group of factors are health and lack of joy and satisfaction from work, sometimes burnout. The second group of factors are high expectations from the employer (*they just want too much from you. Absolutely they want sooo much from you and they pay.....sooo badly*), dynamic between staff and management and relations with other employees.

### Summary of the employability issue

The participants were students of social sciences. This is reflected in their statements. Especially students of psychology put emphasis on further education - specializations, courses, academic degrees. The most frequently mentioned abilities were communication skills, soft skills and various interpersonal skills. The critical importance of resilience (physical & mental) was emphasized at multiple points in the interview. Most of the participants agreed that their course did not help their soft skills development as well as that employers' expectations often are excessive.

### App features

As a way of skills tracking, students named diary, CV updating (*I update my CV like quiet frequently...like recently I updated it like I completed a dissertation using quantitative data, ehh stuff like that...different software packages and stuff like that, the things I have used in my career...like I do occasionally add a thing here and add a thing there but I don't keep a diary or anything like this is what I have improved upon*) or doing that through the current job. However, some students mentioned no keeping track at all (*How would you keep track of that?*).

Among the desired GES App features, students mentioned implementing an interview question bank, sector specific skills and interviews, the STAR (Situation, Task, Action, Result) method, CV building with sector specific phrase bank and skills repository, skills storage, possibilities to set goals and get reminders, compare skills to others doing the same course, containing examples, advice on how to acquire skills (*If you could put in the skill you want to do and it gives you like suggestions on how to acquire the skills*). Students named as similar apps Indeed and LinkedIn. As potential problems, students indicated privacy issues, boring content, increasing self-consciousness (*could maybe make people feel self-conscious of their, if you can see other people's skills and what they're doing and realize aw I'm really behind like I'm not doing as much as this person, and they could get worried and not go for potential jobs*). Additionally, students drew attention to networking, information about what employers are looking for.

According to students' opinions, the app should be evolving, engaging, simple, accessible, not time-consuming, practical, user-friendly and inclusive, visually attractive and interactive, containing prompts, having goals, progress bar and reward system as elements of



gamification (*I think having actual goals to work towards like I am really into gamibility so when it comes to psychology I love gamability. Do something and get an award, do something, achieve something as if you are playing a video game only it's about your life. I get A LOT out of that type of thing...that's just for myself...so I think it has got to be accessible*). For students, interesting would be the content based on games, scenarios, taking into account various of learning styles, and different jobs. However, only a few of participants were attracted to gamification in general.

### 6.3. Focus groups with students in Norway

#### 6.3.1. Participants and procedure

One focus group with 5 students and five short individual interviews were conducted. In total, 10 students between 21 and 28 years of age participated in the research. Seven males and three females. Most of the students were from Computer Science, the other majors are: Global Development Studies, Global Health, Civil Engineering and Cybernetics and Robotics.

#### 6.3.2. Results

##### Students' perspective on their plans and skills

In response to the question “*What are your plans in the field of work?*”, the participants mentioned specific professions they plan to work in (e.g., software consultant, sustainability manager, game designer). Several respondents noted already having a settled job after graduation – some currently work there, others are in the process of recruitment. One of the respondents indicated difficulties in defining plans (*I don't know what I want to work with. But I guess the reason for not knowing is also because there is so much to choose from. I study global development*).

Participants mentioned many skills necessary to work in the profession (*I think it consists of one kind of one technological aspect of me and having knowledge of the relevant things that are applicable to that specific position.... I think it must be willing to show that you can act in in a good matter in life social settings and have good communication skills with the customers and other co-operators. So, I think you have to have both the social and the technological or the like the knowledge aspect of it*). These skills can be grouped into general social skills (communication, teamwork, social skills), personal skills related to taking action

(ability to learn, problem solving, decision making) and specific skills related to work (business skills, technical/general computer skills).

Among skills developed at classes, participants mentioned skills related to knowledge (background knowledge, how to acquire knowledge), teamwork skills (*You kind of learn how to collaborate with different people in that way, that you normally would not choose to collaborate with*), ability to create a portfolio and project management (*Project management and planning and estimation, which is pretty much directly from my course mediation*). Participants also pointed to some gaps (e.g. *[the education program] doesn't necessarily give you sufficient skills in teamwork and communication, so you definitely need to learn more when you are in a new job*).

#### Knowledge of, and attitudes to, GESs

When describing the situation on the labour market, participants indicated the instability and constant changes to which they have to adapt (*Yeah, I also agree that because I mean like society in the job market is continuously changing. So, you should be able to kind of adapt*). Moreover, some participants noted the importance of personality for success in the labour market (*You have to be likeable by people to a certain degree, because emotions have a lot to say in regard to employability*).

In the answer to the question “What sort of skills do you think employers are looking for?”, the participants noted the importance of social skills (communication and teamwork - *Communication skills might be one of the most important (ones). You need to be able to communicate your qualities*) and technological skills (*at least now employers are looking for, like flexibility and technological abilities in order to work online and work from home. Um, yeah, so that also entails you know communication skills*). In addition, the participants also pointed out that the expected skills from an employee are flexibility and ability to learn (*I mean like society in the job market is continuously changing. So, you should be able to kind of adapt*).

In the answer to the question “What do you consider as important in applying for a job?”, the participants indicated many important elements. Most often they paid attention to various aspects of the ability to present oneself as a good / suitable employee: showing the ability to learn new things, showing that you can bring something of value to the company, showing really interest in new job, enthusiasm and openness (*That I have something to show,*

*that I am capable of the position that I'm, like applying for. I will have something like that that they're looking for that I can definitely show that I have in some regard...).*

When describing the skills needed for keeping employment, participants drew attention to two aspects. Firstly, related to the ability to learn and flexibility / ability to adapt (*Being able to update your skill set with the latest or most commonly used technology as it changes is important*). Secondly, linked to social skills, such as teamwork, sociable and communication. Moreover, a lot of responses were centred around very specific technical skills relevant for CS students.

Among the barriers regarding applying for a job the participants mentioned factors related to the lack of self-confidence (self-doubt, mental load, anxiety, uncertainty for skills) and self-presentation (*be able to display skills, presentation of experience or projects*) and factors related to the process of preparing the application (customizing CV, lack of networking events/ job advertisement - *I think there are probably a good number of jobs that are kind of hidden because they're not announced, so you have to know someone in the industry*). Moreover, participants emphasize the importance of the lack of experience.

Among the barriers in job maintenance, the participants mentioned place and nature of work. If they are not in line with expectations, lack of motivation to work and development (*I think maybe if the job isn't what you expected it to be. That could maybe put a stopper to your motivation of continuing the job, or you know salary if it's not as good as you expected*). Participants also paid attention to finding a balance in terms of workload (*You are not used to the work life balance. You can go into the student mindset that 'yes, I can work 12 hours a day', then that could ruin the job for you*) and adapting to workplace trends (*You need to stay up to date with what's new to be relevant and productive*).

### Summary of employability issues

Participants were mainly focused on very domain-specific technical skills and abilities as opposed to more globally applicable skills. A reason for this might be the homogeneity of the group and the majority of the participants being computer science students, who think they will be judged on their technical skills more than anything in an employability setting. However, most of them were able to cite relevant non-technical skills acquired during their studies as well. Among the most popular ones were teamwork and communication, which is understandable, seeing as a master's degree involves a lot of group projects, where

communicational skills are very relevant. In terms of employers' needs and demands, a lot of focus seemed to be on the ability to fit in and adapt to the current practices in the workplace, as well as being able to continuously learn new things.

The participants described the process of entering the job market as a laborious one. The most important are finding jobs to apply for, the need to tailor your CV to each employer's needs, the lack of practical experience, the anxiety and self-doubt associated with waiting for a response and comparing yourself with other potential candidates and the stress of adapting to a completely new workflow after years of university studies. In addition, finding a job you actually want where you will be able to keep your enthusiasm up in the years to come, and not just grabbing the first job you can get your hands on "just because" seems to be a worry for some of them.

### App features

Students mentioned the following ways of tracking the skills development: CV/Resume updating, adding to LinkedIn profile, skills linked to project or experience, collecting certification (*I think that skills often come correlated with some kind of responsibility that you had or some kind of like project or task or work experience..., but those that are kind of standing alone, without having one specific project or certification, then I see the problem with that*), identifying skills when writing cover letter but also trying to remember skills, and use the skills often.

As evidence of skills grades, references, technical tests, certification processes but others do not pay attention to skills certification (*It doesn't provide me any value unless an employer would look for these types of certificates*). Similarly, students got concerns about app as GESs certificate and see the app more like skills developing support (*If there is an official standard recognized by employers. LinkedIn certifications exist. I would not download another app for certification purposes, as it does not add any value for me. But for identifying flaws and developing skills, it could be interesting*).

Among desired functions of the app students listed storing other educational information, possibility to affirm skills or its evidence by others, quantifying skills, integration with LinkedIn, connecting to student portal, translating academic content to skills (*I find it difficult to kind of like, get the grasp of what they'll actually teach me at the end of the day, like, what sort of core skills, am I going to be left with, after having taken the course, and*

*therefore I just like kind of pick something that other people recommend, because it's hard to kind of like, understand their legal speak, and like, læringsmål [translated as learning goals], you know. So, some sort of app that could like translate to what sort of skills I could have after a course and not necessarily after a degree would be nice for me).* Additionally the app should have the option for sharing the content, export data, linking third parties' profiles, adding references or experiences (*Entries, for example, university courses and grades*), suggesting skills, search of people, communication possibilities, good rating system, encourage improvement, personal profile, comments, possibility to add skills if we chose them from the integrated list, setting a goals, update (i.e. monthly) of the progress.

Students named also some potential problems of the app usage, that is comparisons with others may cause mental stress, it would be difficult to prove the skills, data privacy, too much work without satisfactory effects. What is more, the app should be easy to use, possible to be used on-line and off-line, have levels of skills, possibility to get the feedback from employers (*Employers can give you feedback on which skills they appreciate or like the most*), recommended jobs, providing new information (What should I do to improve the different types of skills) and gamification elements would be appreciated.

#### App functionalities summary

Students seems to be interested in a mobile app that can help them in enhancing their chances during job search. However, they seem to be more interested in the app if it can help them identify the skills required for specific job. The most cited currently used solution is LinkedIn. But as one participant mentioned, it is used mostly to track what you know, and not to improve your skills. Therefore, it will be important for the app to indicate what the user can do to improve. Most participants seemed eager to have a high level of control over their data, both in terms of restricting who has access to it, but also an easy way of sharing it with others, either through the app or exported as separate documents. The ability to import information and skills directly from the app without having to copy-paste everything was something they all wanted to see.

One area that is not certain for students is how skills can be documented in an authorized way. They understand that academic skills can be verified with a diploma acquired after studies. But for skills that they have attained during the projects and other activities like communication skills, teamwork skills cannot be documented through some standard

procedure. The app should also suggest skills based on your current education and which skills are most sought after in that line of work and do so in a way that will encourage improvement. They also wanted some information about where to look for jobs, as it is not always easy to find them all.

Social features like comparing your skills with friends or other employees, as well as a search functionality where employers could find people with a specific skillset was also mentioned. Furthermore, a way for employers to endorse skills they appreciate by leaving a like or some kind of sign of approval on your profile might encourage further skill development. Gamification is also an interest area for students. Students suggested that the application can help them set goals to improve their skill set which can be achieved and updated accordingly. A good rating system that will easily let the user quantify their skills might encourage even further improvement.

### ***6.3.3. Identified requirements analysis***

The requirements identified from the focus group interview are listed in Table 2. The requirements are formulated as user stories and ordered based on the priority and relevance with respect to neighbouring requirements. Each requirement is backed up by one or more responses from the focus group interview, and the numbers represent which question it originates from. As a rule of thumb, requirements with a single reference are labelled as low priority, ones with two references as medium, and ones with three or more as high. However, certain requirements that were not adequately discussed in the interviews, that are considered of high necessity by the European researchers, have been bumped up to high priority regardless of number of cross-references. This affects requirements number 1, 5, 6, 9, and 10. In addition, dependencies between requirements have also made it necessary to alter some priorities. In this instance, requirement number 27 has been upgraded to a medium priority due to its dependency to requirement number 28.

Table 2

*The list of the requirements identified from the focus group interview*

<b>Id</b>	<b>As a user I want...</b>	<b>So that...</b>	<b>Priority</b>	<b>Backed by</b>
1	To add my education	I can get relevant skill suggestions and job opportunities	High	15, 17

2	To add my courses	I can give a detailed description of my education	High	14, 15, 17, 20
3	To add my grades	I can use them as a skill certificate	High	14, 15, 17, 20, 22a
4	To add my past and present projects	I can share what I am working on	High	13, 15, 17, 19, 22a, 23
5	To add my internships	I can display relevant work experiences	High	17, 22a
6	To add my skills	I can display my strengths	High	13, 17
7	To add references	I can have credible sources that can vouch for my skills	High	14, 17, 19
8	To add pictures	I can further illustrate an entry	Medium	17, 19
9	To reflect	I get a deep understanding for my experiences and abilities, and use it to prove my skills	High	13
10	The app to encourage reflection for each entry	All entries can be elaborated	High	13, 20
11	To generate a CV based on the entries I have tracked in the app	I do not have to write down the same information twice	High	9, 13, 18, 19
12	The app to suggest new skills based on my education and current skills	I can identify holes in my skillset and become the best version of myself	High	17, 19, 22a, 23
13	The app to suggest finishing incomplete tasks	No work is wasted	Medium	17, 19
14	To quantify my level of skill	To use as a skill certificate and compare with other users	High	15, 19, 20, 23
15	To compare my skills with other users	I can see where I range in comparison to others	Medium	11, 23
16	Gamification features	The app becomes more appealing	High	3, 23, 24
17	To acquire skill certificates through quizzes and challenges	My skills are backed up with real data	High	14, 20, 24
18	To compete with other users on the same skill level as me	I am challenged at an appropriate level	Low	24
19	To transfer information from the	I can take full advantage of everything I have logged in the app	High	15, 18, 19



	app to third-party forms and websites			
20	The app to be intuitive, responsive, and easy to use	I don't have to spend a lot of time getting used to it	High	4, 16, 19
21	The app to require little effort	Using it will not feel like a lot of work	High	16, 18, 21
22	To communicate with employers	I can present my skills to them directly in the app	High	15, 19, 23
23	To see open positions that fit my skillset	I can apply to the most relevant jobs	Medium	11, 23
24	Employers to give feedback on skills they appreciate	I am motivated to work even harder	Medium	19, 23
25	Employers to find me based on my skills	They can contact me about relevant positions	Medium	19, 22a
26	To communicate with other users	We can share thoughts and experiences	Medium	2, 19
27	A personal profile	I can display all relevant information in one place	Medium	19
28	My profile to display a level of completeness based on current skills	I am motivated to continuously improve it	Medium	23, 24
29	Full control over my data	I know who can access it	Low	18
30	To share parts of or my entire profile	Employers can see relevant information about me	Medium	15, 19
31	To export selected parts of my profile to a PDF	I can share data from the app with people that do not have the app	Low	19
32	A feature that will allow educational institutions or companies to back an entry on my profile	My profile will gain credibility	Low	23
33	A text-to-speech feature	Users with visual impairments can use the app	Low	22b
34	A reminder after a set amount of time of inactivity	I don't forget about the app	Low	21
35	Skill certificates to expire after a set amount of time	I keep my skills up to date	Low	21



## 6.4. Focus groups with students in Greece

### 6.4.1. Participants and procedure

Two focus groups were conducted, five participants each. The participants were Greek students and the partner responsible for the research was University of the Peloponnese. The procedure of participant recruitment was similar to the other countries and involved contacting students via social media and university courses.

### 6.4.2. Results

#### Students' perspective on their plans and skills

Among the skills required in the workplace, participants mentioned two groups. Firstly, personal skills such as practical thinking, ability to deal with challenging issues/tasks, problem solving, flexibility, adaptability innovative thinking, self-confidence, courtesy and desire for continuous development (attending professional development programs, willingness for improvement - *Training and lifelong learning are also important. A skilled person must be innovative in his way of thinking*). Secondly, social skills such as communication skills, taking initiatives, responsibility, cultivating team spirit, collaboration and friendly job-atmosphere and organizational skills (*Recently I read a survey concerning a company about the meaning of collaboration among employees and the way they communicate. I was very impressed, because this research highlighted the importance of social interaction between the company employees... Communication and collaboration are very important for companies because they bring to innovation*). Participants also noted the importance of digital skills.

In the area of skills developed during university studies, participants mentioned a few employability skills. They talked about the social skills (communication and collaboration - *It is very important to be able to communicate and work with other people. I do not think that the university does teach us how to be more confident and convincing. However, it does provide a basis for communication and collaboration*), personal skills (critical thinking and developing - *I think that the most important thing [in my university studies] is the way of thinking ... I feel that my studies helped me to think more critically, to search about what I am learning, and to see things beyond the surface*) and very practical skills (CV creation, digital skills).

### Knowledge of, and attitudes to, GESs

Among the job application skills participants mentioned several skills groups. Firstly, personal skills such as flexibility in managing new situations (*I think that flexibility is the most important job skill... The need to adaptive to the work environment, to be able to feel flexible... on dealing with problems at work...*), expression and communication of ideas, courtesy, desire for continuous development, and having hobbies and interests. Secondly, social skills such as communication and collaboration, and organizational skills (*It is important to be able to collaborate with others, to have some organizational and administrative skills*). Thirdly, skills related to presenting yourself during recruitment (self-presentation skills, interview preparation – *I think the most difficult thing for me is to introduce myself in an interview ... to convince the other that I am special*). Participants also noted the importance of recommendations.

In answer to a question about barriers to keeping a job the participants indicated few important elements. Most of them concerned the attitude of the employee. They were: lack of flexibility in the job environment, lack of a culture about self-improvement and acquisition of new skills (*It is matter of personal skills and response to difficult situations. I think that everyone should try to get better and use effectively the time out of job*) and lack of insight into current social changes, also lack of flexibility in job searching (e.g., restriction to traditional approaches or areas). In addition, the respondents paid attention to personal life / family (reconciliation of private and professional life) and gender discrimination issues at the workplace.

### Summary of employability issues

Everything is grouped into four areas: Employability skills developed during university studies, job application skills, skills required in the workplace and barriers to keeping a job. Among the skills, several are repeated at each category (they are needed in the recruitment process, in the work environment, and some of their elements are acquired during studies). These are social skills (especially communication and collaboration) and digital skills. Interestingly, among the barriers to keeping a job the participants mentioned primarily "internal", related to the attitude of the employee; the only other was discrimination in the workplace.

Exemplary factorial approach to analyse apps features

On the basis of the data from Greece, the factorial analysis of the issues of app functionalities is presented. In such an approach, the participants' answers were gathered into wide factors and then these factors were analysed. Below the general factors with referring citations are presented.

Table 3

*Categories, factors and quotes form students' interviews in Greece*

<b>Students' Focus Group Mij, i = FG, j = member within FG)</b>		
<b>Categories</b>	<b>Factors</b>	<b>Quotes</b>
Recording individual job skills	<ul style="list-style-type: none"> <li>- not systematically (all participants)</li> <li>- CV update</li> <li>- Personal record of printed or digital documents/certificates</li> <li>- member in relevant online platforms such as CARRIERA, SKYWALKER, LINKEDIN</li> </ul>	<p>M2.2: The first way to present my skills is to form my CV according to the employer. I can adjust it accordingly and highlight specific skills. Professional sites is another way to report my skills; there I can create my portfolio and networking with other people.</p> <p>M2.1: LinkedIn is a very good app with a nice interface; it support good professional networking.</p> <p>M2.4: Although I have not finished my studies, lately I started enrolling to courses, in order to create a file with the certificates I get so that at some point in the future they will definitely be added to my CV.</p>
Certification of employability skills	<ul style="list-style-type: none"> <li>- continuous training on subjects related to work</li> <li>- professional development seminars</li> <li>- digital skills certifications</li> <li>- certifications from the university (e.g. diploma supplement)</li> <li>- online platform that checks and verifies personal achievements and CV data</li> </ul>	<p>M2.2: You have to constantly collect certificates and participate in seminars and training programs. You always need to improve yourself in the fields you wish to work on.</p> <p>M1.2: Continuous training... It is a process of attending seminars to show that you are active in your field ...</p> <p>M2.5: In addition, there could be an annex where the University could list skills such as collaboration, teamwork, participation in university activities, and in not compulsory seminars. This is important for someone who is looking for a job. That means that an</p>



		official Institution certificates these skills.
Application formats	<ul style="list-style-type: none"> <li>- both forms</li> <li>- on the computer as it is a work tool and has a larger screen</li> </ul>	M1.2: Both forms; everyone has a smart phone and can use a PC
PC-laptop	<ul style="list-style-type: none"> <li>- on the computer as the mobile is associated with the entertainment</li> </ul>	M2.5: Both forms are ideal, but since this is a serious issue I would prefer to use this app on a computer. When you are working on a computer you are more careful and able to decide after more thought. In the case of mobile devices, the user does not usually harness the full functionality and the potential of an application.
Mobile devices	<ul style="list-style-type: none"> <li>- on the mobile as not everyone has a PC</li> </ul>	M2.4: The computer is a device that you are more concentrated when you want to search for relevant information e.g., for your subject. Personally, I never use my mobile phone to enter a website or to do something about my work; I always use my computer. I also prefer a computer because of the larger screen.
Both forms	<ul style="list-style-type: none"> <li>- on the mobile phone as the PCs are outdated</li> </ul>	M2.1: In my opinion computers are a bit outdated. Of course, the application should work in both (pc and mobile devices), in order to cover all users. But if I had to choose, I would prefer a mobile app.
Effectiveness of such an application	<ul style="list-style-type: none"> <li>- application in the form of portfolio presenting personal skills and achievements</li> <li>- application for uploading my CV</li> <li>- potential employers could have access to information from this app</li> <li>- providing important information about employability skills</li> <li>- professional networking features</li> <li>- app with abilities to uploading data from university and employers</li> </ul>	<p>M1.2: ... you could upload your work life and your achievements, and that could function as a kind of repository, in which the potential employers could search for employees. That is useful for the human resource department of the companies.</p> <p>M2.5: As I said before, I believe that it is important a person's (skill) evaluation to be certified by an institution, such as a university. This certification could be provided by an academic institution or a company. All the big companies evaluate their employees. I believe that the evaluation of an employer is more reliable than uploading on a platform certificates concerning an interested</p>



		<p>(potential) employee.</p> <p>M2.3: I think that it is important to have a platform where a company, an institution like a university, could upload specific certifications about the skills, degrees or qualifications of particular users. Also, it is important that the academic educators or the employers could upload specific content.</p> <p>M2.1: Professional networking (which already exists in our life) should go through such an application for employability skills.</p>
Features of the application	<ul style="list-style-type: none"> <li>- interactive and up-to-date material related to interviews, CVs, etc.</li> <li>- statistic data about employability (new entrants to the labour market, general labour market statistics etc.)</li> <li>- presentation of jobs</li> <li>- a section with job requests</li> <li>- ease to use</li> <li>- different user profiles with ability to organize the content in the app</li> </ul>	<p>M1.2: The app could have uploaded employability data, be up to date with data for the current year, that is, how many people have found a new job and in which sector? That is an interesting thing, I mean that about the mobility... and other labour market statistics.</p> <p>M1.2: Every user should be able to make a profile, to save it, to be able to note all the interesting things in the app. After that they should have the ability to use those personalized things the way they have organized them.</p> <p>M2.5: The app should give the ability to the employee to describe himself with his own criteria, and to list everything that is considered important. On the other hand, the employer should have the opportunity to describe what he considers important for an employee.</p>
Application differentiation	<ul style="list-style-type: none"> <li>- same interface of the application for both genders and for people with disabilities</li> <li>- No differentiation but with appropriate search filters</li> <li>- differentiation between unemployed and employed people</li> <li>- differentiation between employees with short and long work experience</li> </ul>	<p>M2.3: Yes, it is not necessary to be different in terms of gender. However, I believe that employees and employers have their own criteria, so there could be a variety of levels of differentiation, not only in terms of gender or age, but also in terms of nationality and user profile (employers or employees).</p> <p>M2.3: It should definitely have two levels for employees and non-</p>



	employees and respectively two clusters for the newcomers in the labour market and the older ones.
<p>Gamification features of the application</p> <ul style="list-style-type: none"> <li>- Positive about gamification (enjoyable, attractive tasks)</li> <li>- Gaming features: collaboration, levels of game play, and badges</li> <li>- Include simulation of job-based/related situations</li> <li>- A gaming app would not be effective (2 students appeared cautious about gaming features)</li> </ul>	<p>M1.3: Gaming has no age. It is more enjoyable and, especially, when you can play with others and collaborate; that is, to be able to collaborate with other people that you can choice.</p> <p>M1.2: I do not agree (with gamification). I do not find it so interesting. I mean that the simulation game can be very useful in some issues, i.e. to acquire an experience before you get to the real job situation ... But I think that in terms of job searching it would not offer effective help.</p> <p>M2.5: I am very positive; I would like use of badges related to specific missions.</p> <p>M2.3: I am cautious about the seriousness of the platform embedding gaming features. Certainly, there will be a motivation for employees with the gamification. However, logging in the platform, will you consider it as something serious or as a game? I try to think about it a bit. It seems to be a good practice; however, there is danger to loose balance, because it depends not only on those who define the gamification features of the app but also on those who play i.e., the users.</p>
<p>Frequency of activities in the app</p> <ul style="list-style-type: none"> <li>- for every action of the user</li> <li>- every two weeks</li> <li>- every month</li> </ul>	<p>M2.1: The application can be updated for any action of the interested party</p> <p>M2.5: Monthly update of the application content.</p> <p>I feel that we lost this question (the students were discussing about content update).</p> <p>However, interactivity and engagement in game activities is quite clear in students' views and perceptions.</p>
<p>Types of activities that</p> <ul style="list-style-type: none"> <li>- describing working life and experiences of employees</li> </ul>	<p>M1.5. It could be a good idea to use specific persons to present and describe their professional life.</p>



may be useful in this app

- simulation of job-related situations or events
- video presentation of the working life of some specific employees
- communication between employer and employee through the application (e.g. messaging)
- events e.g., career days, communication of users with representatives of companies

M1.2:...by people who will tell their experience about their workplace, how they arrived, show their route, where they passed and how they arrived, say, in a place ... I think this is very useful

M2.1: Yes it could be important if the employer could match information about the potential employees. But it is, also, important to provide a connection between a company and the interested employee.

M2.2: There could be an alternative form of communication and connection between employees and companies. Something like **career days**, contact/communication between all interested parties or **networking** like Facebook.

## 6.5. Summary – focus groups with students

### 6.5.1. Summary of employability issues - students

Students from all countries mentioned similar skills. The most frequently mentioned skills were: social skills (especially communication and collaboration), digital skills and knowledge foreign languages. Flexibility and resilience (physical & mental) were also repeated. There were no visible differences between students from the different countries. On the other hand, some differences appeared depending on the field of study (future area of work). Students of social sciences, especially psychology put emphasis on further education - specializations, courses, academic degrees and that university studies are not enough to have good job in the field of psychology. Computer Science students were mainly focused on very domain-specific technical skills and abilities as opposed to more globally applicable skills.

In terms of employers' needs and demands, a lot of focus seemed to be on the ability to fit in and adapt to the current practices in the workplace, as well as being able to continuously learn new things. Students also talked about the key importance of professional experience and the high expectations of employers.



### ***6.5.2. Summary of app features – students***

The findings from students' focus groups across all partner countries are presented in a comparative way. Crucial findings are gathered together in Table 4 showing what ideas are shared and which ones are unique for particular countries.

#### ***Most crucial app features***

Table 4 presents data on app features collected via focus groups with students in four countries: Scotland, Norway, Poland and Greece. In general, eight focus groups and five individual interviews with the same scenario were conducted. There are clear similarities in the experiences with most frequently used applications. Students mainly mention: social media, organizer, exercise applications and applications that facilitate learning or work. The most suitable features of the mentioned apps were: user-friendly, easy to use, quick, intuitive, communication with people, free access, useability.

All the students who participated in the focus groups were asked about the desired functionalities of the GES App. Again, there are some parallels between countries. In general, students from all countries mentioned such functionalities as: the possibility of building a CV, contact with specialists, integration with job offers, individual profile with skills portfolio, networking, interactive elements, the possibility to check strengths and weaknesses, tracking skills, educational materials in the field of specific skills, gamification elements, motivational aspects, presentation of requirements for a given position, information on trainings, workshops and internships.

In all four countries the respondents stated that: the application should be available in both versions: mobile and computer, the content should not be differentiated by gender - in the Polish part there was only a comment on the recognition of the female / male form as well as should have facilities for people with disabilities. In opinion of the most of students, it is worth considering the choice of how often the user wants to receive notifications.



Table 4

*Summary of the results of the focus research on a sample of students from three partner countries: Scotland, Norway, Poland.*

Categories	UWS	NTNU	CSWU	UoP
Applications general	- Facebook TikTok Instagram hopping Apps physical fitness meditation reddit Duolingo Fittr fitnes pal twitter Audible Libby Headspace Calm	Instagram Facebook Snapchat TikTok Youtube Google Drive Whats app Discord 9GAG Chrome, Mozzila Spotify Steam Email PMaps Trello Organizer apps Food ordering apps Gaming apps Banking apps Mobile apps	Messenger Pracuj.pl What's App e-mail Facebook Banking Apps TikTok Instagram Google Maps OLX MS Teams Spotify Netflix LinkedIn Google Drive jakdojade.pl Bolt Sound Cloud Zalando Pinterest MobileMPK Youtube Notatki.keep(notes)	Messenger Facebook Instagram Viber Skype Zoom Office applications Google Docs Google Forms YouTube Duolingo

Self-development applications	Fitness apps mental health Language learning Physical health	Meditation apps Health app YouTube Organizers Time management app Exercise app Language practicing app Audiobook app	Bible app
			language learning apps educational applications sport activity app to change habits challenge app meditation apps YouTube
Educational applications	TikTok Canvas Moodle My Day World of Work	tracking courses Canvas app (Academic apps) Blackboard (academic App) Microsoft Teams Memorizing app Chess coach app Duolingo	driving license support
			to learn maths for children helps to concentrate apps world administrative map for calming down Slees analysis
App features – general	easy to use interactive communication with people quick free access practical informative visual	easy to use communication entertainment no ads and distraction access to information number of users	easy to use user-friendly communication accounts free access access to news spending free time comprehensibility personalization running in the background appearance simple regulations



Students ideas for the GES app	<ul style="list-style-type: none"> <li>• setting goals and reminders</li> <li>• STAR system</li> <li>• acquiring skills</li> <li>• comparison with others</li> <li>• motivating for job preparing</li> <li>• networking</li> <li>• evolving</li> <li>• engaging</li> <li>• simple</li> <li>• accessible</li> <li>• not time-consuming</li> <li>• practical</li> <li>• indicating what employers are looking for</li> <li>• tracking progress</li> <li>• reflection</li> <li>• interview Bank</li> <li>• CV building</li> <li>• realistic</li> <li>• incorporate into coursework</li> <li>• tells people that are new to job market how to get experience</li> <li>• gaining new skills</li> <li>• allows you to maintain skills</li> <li>• useful to employers</li> <li>• quick</li> <li>• reliable</li> <li>• informative</li> <li>• visual</li> <li>• based on goals</li> </ul>	<ul style="list-style-type: none"> <li>• mobile app</li> <li>• majors differentiation</li> <li>• translating academics to skills</li> <li>• tracking skills</li> <li>• saving academic projects depicting experience or skills</li> <li>• connection to student portal</li> <li>• affirmation by others (like LinkedIn)</li> <li>• integrate with LinkedIn</li> <li>• direct contact from employers</li> <li>• reporting score or percentage</li> <li>• quantifying skills</li> <li>• adding skills</li> <li>• list of skills</li> <li>• PDF file for skill Set</li> <li>• roof of skills in form of certificate or quiz</li> <li>• simplicity</li> <li>• free of cost</li> <li>• iOS and Android and desktop</li> <li>• customization application for job</li> <li>• build CV</li> <li>• monthly update on your progress</li> <li>• setting goals</li> <li>• suggest goal to reach</li> <li>• gamification</li> <li>• offline game</li> </ul>	<ul style="list-style-type: none"> <li>• access to the CV builder</li> <li>• tracking strengths and weaknesses</li> <li>• free access</li> <li>• employers accounts</li> <li>• tracking skills</li> <li>• training, webinars and academic courses offers in the required skills for a given position</li> <li>• gamification</li> <li>• training on participation in an interview</li> <li>• the possibility of attaching documents confirming the acquired skills</li> <li>• adding references by employers, colleagues and lecturers</li> <li>• list of problems in the first job</li> <li>• option of contacting a specialist</li> <li>• list of skills with the possibility to assess them by student, employer and co-workers</li> <li>• case studies</li> <li>• a set of knowledge and advices: how to write a CV and ML, how to enter the labour market, motivation to expand on new aspects</li> <li>• forum</li> <li>• account for academic teachers</li> <li>• different user statuses: job applicant / job change, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• easy to use and reliable</li> <li>• friendly user interface</li> <li>• communication</li> <li>• low memory requirements</li> <li>• mobile app</li> <li>• free to use</li> <li>• no advertisements</li> <li>• material related to interviews, CVs, etc.</li> <li>• statistics about employability</li> <li>• presentation of jobs</li> <li>• job offers</li> <li>• different user profiles with ability to organize the content in the app</li> <li>• employees experience</li> <li>• simulation of job-related situations or events</li> <li>• video presentation job positions</li> <li>• communication between employer and employee</li> <li>• events e.g., career days, communication of users with representatives of companies</li> <li>• Gamification: collaboration, levels of game play, and badges, mutation of job-based/related situations</li> </ul>
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- |   |   |  |   |
|---|---|--|---|
| <ul style="list-style-type: none"> <li>• reward system</li> <li>• scenario based</li> <li>• quiz person</li> <li>• progress bar</li> <li>• optional games</li> <li>• tailored to different jobs</li> <li>•</li> </ul> | <ul style="list-style-type: none"> <li>• sharing</li> <li>• export as list or summary</li> <li>• references</li> <li>• search for people</li> <li>• communication</li> <li>• good rating system</li> <li>• encourage improvement</li> <li>• personal profile</li> <li>• comments</li> <li>• visit counter</li> <li>• asking questions during reflection phase</li> <li>• projects</li> <li>• internships</li> <li>• experiences</li> <li>• employers give feedback</li> <li>• sought after skills</li> <li>• recommend jobs</li> <li>• where to apply for jobs</li> <li>• informative</li> <li>• online/offline</li> <li>• updates</li> </ul> | <ul style="list-style-type: none"> <li>• option to compare your own skills with other users</li> <li>• job offers</li> <li>• recommended offers in terms of demonstrated skills</li> <li>• “What would you do if...” as a way of showing one’s skills</li> <li>• candidate's profile with the option of adding photos and videos</li> <li>• user-friendly</li> <li>• job matching</li> <li>• various account options (with or without public data)</li> <li>• communication with the employer - e.g. chat</li> <li>• feedback from employer on the job application</li> <li>• counter of the applications sent</li> <li>• list of skills</li> <li>• function ‘interested in’ or ‘observed’</li> <li>• tutorial for new users</li> <li>• dark background</li> <li>• offline mode</li> <li>• training videos</li> <li>• no ads</li> <li>• without premium options</li> <li>• acquiring missing skills</li> </ul> | <ul style="list-style-type: none"> <li>• user profiles presenting personal skills and achievements</li> <li>• uploading CV</li> <li>• information about employability skills</li> <li>• professional networking features</li> <li>• uploading data from university and employers</li> </ul> |
|---|---|--|---|
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PC/mobile mode	both	both	both	both
Similar apps	LinkedIn Indeed	LinkedIn Kibo (Similar app) LinkedIn CV Partner WA.works Code Academy Tinder” for work	LinkedIn Pracuj.pl OLX recruiting in the field of IT (without name) Praca za rogiem (Job around the corner)	
Potential problems with app using	to high self-conscious privacy boring insecure	comparisons can result in mental stress difficult to prove skill data security a lot of “work” for the user might be forgotten	data security issues problematic confirmation of skills the risk of leakage	
In-app notifications	should not too demanding, statuses that affect the frequency of notifications	choice for use	personalized frequency once a week general notification	for every action of the user every two weeks every month
Application differentiation	text reading visual learner larger text support or different tasks for dyslexia	special features for people with disabilities text to speech proper font for Dyslexia Options for colors for colorblind Visual impairments	enlarged font reading job offers adjusting font colour dark theme contrast change dictating disability as a filter for job and courses	no differentiation but appropriate search filters between unemployed and employed people between employees with short and long work experience
Should the application differ by gender?	NO	NO	NO Matched grammatical forms (female or male)	NO

## 6.6. Focus group with academics in Poland

### 6.6.1. Participants and procedure

The participants were four academic teachers from Cardinal Stefan Wyszyński University in Warsaw, two women and two men. The first one was a man from the Faculty of Theology, the Institute of Media Education and Journalism, previously worked at media especially publishing houses, currently a PhD candidate in the field of political science. The second was a man from the Faculty of Law and Administration, MA and PhD in law, an academic teacher for 13 years. The third one was a woman from the Institute of Psychology, MA and PhD in psychology, an academic teacher for 7 years. The fourth was a woman from the Faculty of Pedagogical Science, special educator, typhlo-pedagogue, Polish philologist, an academic teacher for 11 years.

The participants were asked to take part in the focus group by personal contact via e-mail. They were targeted on the basis of their known experience with innovative approaches to teaching, positive opinion about high quality of teaching, participating in tutoring training and finally the willingness and availability to take part in the meeting.

### 6.6.2. Results

#### Employability issues

As the most important skills developed at taught courses, the academics listed: skills acquired through project work (cooperate, contact with real customers, experience), presentation skills, coping with difficult situations, groupwork, skills to prepare a research and analytical thinking.

The participants' statements showed that they set a great importance on student's internships as a way of acquiring skills needed in the future work (*The area of student internships is crucial for future professional work and we are simply obliged to grant the qualification only when the student has worked out a certain number of hours ... they simply have to enter all types of institutions, then we confirm professional qualifications to work with pupils, I also think that this is the best school of vocation and preparation for work ... And in fact it is so, and the career office confirms and we monitor the fate of graduates that very often our students simply stay there in these facilities, i.e. they find this place of work after internships*). Participants mentioned some problems related to the transfer of skills. These are:



too little time to engage students in practical activities and lack of students' willingness to undertake practical, ambitious topics of bachelor's theses.

### App features

From the teachers' perspectives, an app in the field of employability could be useful for monitoring the learning effects, modification of curriculum, as a competences questionnaire, an informational channel about skills needed in the labour market skills, a tool tutoring. They noticed one main problem regarding the app: It needs to be implemented by the university as an official tool.

Teacher saw the need for individualization in creating, that is a skills list for particular lectures, the need for different kinds of accounts differed in functionality. The app could also be a platform, where skills are connected to occupations and where students could learn something about labour market and recruitment. What was interesting was, as female participants noticed, the gender differences in particular occupations, in two ways, that sometimes offers are prepared in the way that it is obvious that the employer is looking for a man/woman and that there are different requirements from men/women for the same positions. Among the desired features of the app teachers mentioned a user-friendly interface, easy-to-use, possibility to create groups and modules with contents, questionnaires for vocational profiling and connection between offers and skills. Teachers highlighted also the importance of accessibility issues, adaptation to WCAG2.1, different languages, iconography and very simple language.

## **6.7. Focus group with academics in Scotland**

### ***6.7.1. Participants and procedure***

The participants were five academic teachers from University of the West of Scotland, three women and two men. The first was a Lecturer in Sociology for 3.5 years. The second was Lecturer in Performance and Screen for 12 years. The third was a Lecturer in Community Education for 18 years. The fourth was a Lecturer in Computer Game Technology for 5 years. The fifth was a Senior Lecturer in Sociology and Social Policy and has worked in academia for 34 years.

The researchers at UWS pooled a list of contacts from a diverse range of divisions across the institution. These contacts were then emailed with a brief overview of the study and

invited to participate. Given the additional teaching pressures associated with the onset of remote teaching, only 5 of the 10 staff members contacted were able to take part. Due to the pandemic, the focus group took place on Zoom as face-to-face meeting was prohibited by government guidelines.

### 6.7.2. Results

As the most important skill developed at taught courses, academics indicated preparation for reality of job market (*...our biggest job is to make them prepared for the fact that they wouldn't have a nine to five they wouldn't have a regular salary, they will have to be quite entrepreneurial in how they go about earning their income*). Among skills development addressed in the general curriculum, academics mentioned inviting guest speakers from industry (*One thing we do is we have modules where the majority of it is guest speakers. So I really think that's a valuable inclusion, because a lot of times the guest speaker will you know have something to say but they may well also have jobs to offer and, or have tips on how to apply for jobs*), turning on employability skills in course modules (i.e. through assessment modes - *The ability to do meaningful peer review, really critique the work of others because that's what you're going to do in the industry when you go there...*).

Participants mentioned few Graduate Employability Skills developed during taught course. They talked about group work, giving feedback and evaluating each other's work (*The ability to do meaningful peer review, really critique the work of others because that's what you're going to do in the industry when you go there, but also critique the work of others from an ethical perspective in order to help them to help yourself. And so the other thing we've tried to add is yes peer review, Yes, help yourself, yes help others but also build in a sense of accountability to how the work of others has impacted on you*), critical thinking and being creative, reflectivity and the ability to evaluate your own ideas (*the written part of that is a reflective on their contribution to the thing. How it went, what was their contribution, what would they change if they were doing it in a practice context in future*). One participant indicated that they explain explicitly to their students that these skills were included to improve their employability skills.

As many of the participants stated that they taught on degrees without a clear and direct vocational pathway, they felt that simple creating a CV was less important than supporting students to craft a portfolio of work to present to a diverse range of employers.

### App features

Participants indicated that students can seem reluctant to engage with apps that are university-driven, but highlighted that apps are becoming a more popular route to access virtual learning platforms such as Moodle and Aula. It was raised that amongst the most popular apps with students are those focused around communication and interaction with peers (e.g. WhatsApp, Facebook), which some participants suggested may be a useful addition to a GES app – the opportunity for app members to interact and engage with others. Gamification was supported by most participants, indicating that incentivising the development of skills in a fun way may be a useful mechanism by which to encourage participation and continued engagement to meet goals. There was also emphasis on the importance of the app being fundamentally easy to use and attractive, and that goal tracking might best be presented in line with other common visual skill frameworks applied in the user’s institution (e.g. the CPD wheel used with PhD students at UWS). In terms of buy-in from both a teacher and employer perspective, all participants felt strongly about the importance of the GES app not replacing currently popular apps that are used to demonstrate skills to employers, such as LinkedIn or GitHub, but instead integrating or linking with them to provide a more comprehensive and outward facing tool. Some examples of this were either formally aligning with these popular apps/websites, or signposting students to them as part of the app’s activities. In line with this, there was support for the notion that the output presented to employers should not necessarily be a direct output from the app, but instead should be the profile or portfolio the app has guided them to produce on these more widely known platforms. Participants saw the app being useful across a range of teaching contexts, including within the Personal Tutor framework, in specific modules and at a higher programme level. However, some reservations were raised primarily in terms of engaging employers on the outward facing end of the app (if the app itself were to produce an output), tailoring the app for users at all stages of their careers (as opposed to solely newcomers with little understanding of employability) and having the app be responsive to the user in a meaningful way in terms of feedback or goal achievement.

## 6.8. Focus group with academics in Norway

### 6.8.1. Participants and procedure

There were five academic employees who have participated in the following focus group interview out of which 3 were women and two were men. They were all employees of the Norwegian University of Science and Technology in Trondheim. The procedure of recruiting was similar like in other countries described above.

### 6.8.2. Results

#### Employability issues

Among skills expected by employers, academics mentioned technical skills and other domain related skills, social skills – group work (*So, the ability to work in a group, or standalone I mean it's also kind of depends on the person. So, this is could sometime be challenging. You when they start working in industry and they are at the beginning this could be challenging. So, but I at least my understanding is that in our unit within Software Engineering subjects. We are focusing on working in groups and like these agile methods and so this is relevant to learn I mean for the students in the future, when they start working in the industry*), problem solving and flexibility, individual attitude and job commitment.

Among skill developed at taught courses, academics indicated collaboration, technical and digital skills (and integration of technologies), presentation skills (*And I would also like to add the presentation skills, it's never explicit in our course descriptions, but we always, I mean in many courses we have group presentations or individual presentations...*) and problem solving (*But I would also say that problem solving skills is a part of many of our courses as we have many engineering focused study programs*). All academic staff are related to the technical university, which is reflected in their statements. All the listed skills (both domain-specific and general) are contextually related to the profession of programmer, computer science, etc.

#### App features

Academic staff and teachers emphasized the integration of app with academics and courses that can also offer insight to the outcomes of courses taught. This can help students to reflect on skills that can be learned during course. The respondents also indicate that training is required to understand the concept of employability skills and the app is being developed in this regard. The interview also reflects how skills are interpreted by academic personally,

however, it seems that there is no formal way to document skills in academics apart from diploma. However, technical fields like IT have some tools that can help students exhibit their technical skills. Interview also indicates the need of some incentives or motivation for students that can pursue them to use app on regular basis so that their learning activities can be monitored by them during studies. It is suggested that if students can map skills to course activities or any academic activities during their study and can store information in app, then it would be beneficial for them while searching job as they will know what they have learned and how the skill is developed. As a required app features teachers pointed out reference to work done or projects, possessed abilities, report skills, multimedia, notification, tracking learning process and having integration of academics and teaching.

## 6.9. Focus group with academics in Greece

### 6.9.1 Participants and procedure

In the focus group five academic teachers from the University of Peloponnese took part. The procedure of recutting was similar to the other countries described above.

### 6.9.2. Results

#### Employability issues

The academics mentioned various difficulties related to applying for a job and problems related to the development of employability skills such as:

- curricula not directed to students' preparation for the job market/ the curriculum lacks connection to the labour market (*There is no planning for job application skills in the curriculum, at least in my Department. However, this could happen randomly. I try sometimes, possibly other colleagues do the same but not under a structured/organized way, with a specific objective*),
- a lack of job application skills,
- students acquire just knowledge in the subject matter, knowledge acquisition is more important than skill development and students must acquire skills on their own (*Development of employability skills is not part of our curriculum, even in our Department of Electrical Engineering. In a way, it is like telling to the students that they need to develop those skills by themselves. That is, "you have to learn it by yourself because we really failed or do not have time to teach you"*)

- students lack self-presentation skills to claim a job (*The majority of the students do not know how to create their CV using a specific template (e.g. Europass). Even graduates do not know how to do this.... There are no courses for counselling, orientation and employment strategy as an essential part of their program of studies. This is also necessary for secondary education*),
- limited space for the development of employability skills, a lack of time and relevant course organization (*There is no time in my courses ... no possibility for skills' development, even in the back of my mind. There is pressure to cover the content ... You have to cover specific content knowledge*).

The interviewees emphasized that the Greek educational system not only in higher education, but also in secondary education is knowledge-oriented, that is it focuses on knowledge-centric processes. The academics mentioned certain activities used to raise students' awareness about employability skills. There were: groups tasks and activities to cultivate collaboration skills (*I did create an informal student group; I tried to encourage them to present their thoughts, to share them with peers and work with others to create something that seems unique or wonderful*), creating games and group activities (*Group games and collaborative activities could help toward the creation of working groups and bonds among students that will be helpful to individual development*) and trying changes in the curriculum.

The interviewees also noted a lack of pedagogical knowledge of academics and lack of staff professional development programs, which makes it very difficult to create employability skills in students (*We as educators lack knowledge in university pedagogy... We need professional development programs to achieve knowledge about proper pedagogy and educational practices. I am afraid that many colleagues are hostile or cautious about this ... For example, many Mathematicians say that to teach Mathematics I just need to know Mathematics!*).

### App features

Participants mentioned some particular app features worth consideration. The app should enable different perspectives: employer – searching for employees; university – connection with the labour market and student – systematic recording of skills for job; revealing and projecting latent and implicit skills; encourage in skills development (*The goal is not only to record the skills of our students but also to cultivate and encourage skills development. I do*

*not think that a digital application can help in this*). Among another app functionalities there were mentioned: scenarios based on case studies to highlight important professional skills; confrontation with workplace situations; reflective and divergent thinking about skills, easy access, with activities based on exploration and reflection containing interactive content and gamification features, personalization of options.

## **6.10. Summary – focus groups with academics**

As the most important skill are developed in taught courses, academics indicated preparation for the reality of the job market (student internships, project work). Participants mentioned few Graduate Employability Skills developed during taught course. They talked about group work, giving feedback and evaluating each other's work, critical thinking and being creative, reflectivity, presentation skills and the ability to evaluate your own ideas.

All Norwegian academic staff are related to the technical university, which is reflected in their statements. All the listed skills (both domain-specific and general) are contextually related to the profession of programmer, computer science, etc. Participants mentioned some problems related to the transfer of skills. These are: too little time to engage students in practical activities and lack of students' willingness to undertake practical, ambitious topics of bachelor's theses. The Greek academics mentioned various difficulties related to applying for a job and problems related to the development of employability skills such as: curricula not directed to the students' preparation for the job market, a lack of job application skills, a lack of self-presentation skills and limited space for the development of employability skills, a lack of time and relevant course organization.

## **6.11. Individual interviews with employers and career counsellors in Poland**

### ***6.11.1. Participants and procedure***

In sum, four experts were interviewed to collect employers insights for employability and desired app features in Poland. There were two employers and two university career office workers. The first was a Vice-Director of the Institute of Psychology, Cardinal Stefan Wyszyński University in Warsaw (CSWU), responsible for the research commercialization and for planning both curricular and extracurricular classes that prepare students for employment in such places as community mental health centres. The second was a psychologist with 7 years



of work experience in human resources. She currently works in international corporation in the department of development, training and learning. Additionally, career counsellor for 10 years, teacher of vocational counselling in primary school and the university representative responsible for the project where the app connecting students with internships was created.

### **6.11.2. Results**

#### *Skills helpful to find and keep employment*

The first interviewee mentioned the following skills as important: problem solving, applying theoretical knowledge to practice, ability to cooperate, conflict solving (with clients and with supervisors), ability to synthesize results from different psychological tests or knowledge from different subjects. Desire to develop, broadening the knowledge based on reliable, scientific sources was named as crucial skill.

The second participant drew attention to strengths identification (self-reflection), preparing a list of potential employers, reflection on foregoing experience, having a kind of career coach (*First of all, they should also have access to someone we call it a career coach, you know an adviser who, when I'm a student or even a graduate, and I just don't know what I can do, how can I use what I know, what I can do, I think that such access to such an advice would be definitely a huge plus*) and persistence (not giving up and still trying). Interviewee noted no crucial GESs, it depends on organization and personal values, but she mentioned important soft skills: self-organization of work time, tasks prioritization, groupwork, presentation skills, communicational skills and the ability to get out of a difficult situation. Moreover, she emphasizes that *there is less and less emphasis on education, and more emphasis on practice, and it is visible both from the employer's point of view, but also from the student's perspective*. The interviewee noticed that from the perspective of the employer, three things are important: quick adaptation to changes, flexibility and openness.

The third employer listed communicativeness, the ability to find oneself in various situations (operability, versatility), qualifications, foreign languages, problem solving, conflict resolution, customer orientation, business competences, self-presentation, elements of entrepreneurship, the ability to manage and know the circulation of documentation, good relations, the feeling that the company cares about the employee, job satisfaction, satisfaction with remuneration and bonuses, a sense of attachment to the company,

The fourth interviewee highlighted the most important in job application is the willingness for working and job maintenance are diligence, progress in skills and competences, commitment to a job and creativity. Employers are looking for self-confidence, responsibility, loyalty, ability to work in a team, communicativeness, creativity, good organization of work, good time management, the number of majors, different activities during studies, that is voluntary service. Among crucial GESs there are self-presentation, self-confidence, high self-assessment and experience in a field.

### The key Barriers

Among the main barriers regarding applying for a job and maintaining employment, first participant indicated: lack of courage, problems with making decisions and taking responsibility for them and a lack of enterprise (*The second thing I see is entrepreneurship, because I think we had a lot of students with such a knack as I remember them ... and I don't know how it happened that somewhere it came to nothing, as far as I know their careers and as far as I know what they are doing in their lives now, I have the impression that this is a wasted potential*), but also he highlighted that graduates lack commitment and they change the work to often and they do not treat recruitment as a way to develop and becoming aware of their own weaknesses.

The second interviewee mentioned: a lack of self-confidence or to high self-confidence, poorly constructed CV (*very often students simply use some templates, they do not know how much value a well-prepared CV can bring, both in terms of content, but also visually, that much more often a CV that is different than in a typical template will get notice*), a lack of purpose or aim in life, problems with staying motivated and short-lived enthusiasm.

Next participants identified the main barriers as the pandemic situation, inexperience, lack of independence, no desire to further develop and be versatile but also a lack of loyalty to the employer. The fourth expert indicated few job offers, a lack of information about job offers, high competitiveness and very high requirements.

### App features

The first expert indicated the following app features: confirmation of completed internship, skills assessment by an observer, recommendations from a supervisor, possibility to confirm/assess the skill levels by other people, possibility to assess student's skills at the

beginning and at the end of the internship by internship supervisor, competence profile based on partial grades collected by students during the course of studies. In general, the app needs to be easy-to-use, intuitive and user-friendly. The participant agreed that the GES App would be useful. It could be used by teachers to support team work and help teachers evaluate students' performance in team tasks. In his opinion, the app should be adjusted to the specialization chosen by a student. The student should choose their career path and be assessed in terms of skills crucial for a certain position. The skills could be developed during classes, apprenticeships, or internships and assessed by teachers or supervisors. The app should have a mobile version adapted to smartphones.

The second interviewee indicated the app should offer possibility to find the strengths and in the case also possible career paths. However, the most important is participation of other people, experts and employers in two forms. Firstly, the past employers and co-workers should have the possibility to assess and certify skills students claim to possess. Secondly, students should have the possibility to contact with some kind of career coach who can advise in the field of strengths, career paths, and skills needed for particular job. Additionally, the app should provide a career path and steps needed to be fulfilled to achieve particular job, connect students organizations and companies, provide possibility to give a feedback, liking skills by other users and include CV generator.

The third participant among required app features indicated app availability on the phone, containing job offers, filtering the type of work, information about student internships, practical guides in the field of soft skills, demonstration videos of the recruitment interview, simulation of a recruitment interview, CV templates, job offers by the location of the place of residence, a tool for determining strengths/weaknesses, contact with a career counsellor.

The fourth expert claimed the app should match candidates and job offers, provide direct access to CV after accepting an offer, contain student's list of strengths. What is more, it would be desired the app has different accounts (student, teacher, administrative staff), a list of trainings for teachers and administrative staff, basic personal information, a mentor with presentation of levels and steps in development, kind of a cooperation, where career counsellors from university are mentors in the app.

### Summary

The participants emphasized the importance of ability to cooperate and willingness to learn and work as the most important skills on the labour market. They paid attention to the ability to apply theoretical knowledge in practice and the ability to present their skills and experience. All of them highlighted the importance to contact to real person like career counsellor or employer to get the feedback on student's employability. The Polish experts see the app as a platform connecting students with employers and career experts but also matching jobs on the base of skills. They agreed the app should provide the possibility to track and adjust skills, confirm possessed skills and prepare for recruitment.

## **6.12. Individual interviews with employers in Scotland**

### ***6.12.1. Participants and procedure***

There were five employers who gave interviews. The first is a representative of middle management with over eight years of experience in graduate recruitment. Three people work in Skills Development Scotland. The fifth was Chief Executive Officer from the e-commerce business. The experts were recruited via the University's careers service. Interview carried out online via Zoom.

### ***6.12.2. Results***

#### *Knowledge & Attitude*

The first employer showed a strong affinity towards the GES in terms of their knowledge as well as its significance in their recruitment process. They stressed throughout the interview how the grades and field and place of study do not hold much significance to them in the process, but a well-rounded portfolio of the graduates that is assessed in their multi-tiered assessment process.

In the second interview, employers showed a strong affinity towards the GES in terms of their knowledge as well as its significance in their recruitment process. The main aim of the recruitment process is to hire employees who will develop in the company and bring something valuable to it (*it's about getting great talent into the organization and then keeping them engaged and motivated so then they do want to stay with us long term, and really grow within the business*).

The third had surprisingly little to say about knowledge and attitudes. The employer did highlight that willingness to learn and drive more important than skills (*We've employed people before in the past that don't actually have the skills to suit the job but they've had the attitude for it. So, yeah, but see actually more cases than not, with recruiting people, but they've had the willingness and the drive to learn*). Said that candidates showcasing their personalities was essential for employers and their abilities to demonstrate their skills and their drive was a skill in itself.

#### Employer's assessment perspective on GES

Their organization of first employer use 6 competency assessment model in graduate recruitment process to assess some level of competency in (i) customer service, (ii) Sales, (iii) work ethic, (iv) flexibility, (v) leadership, and (vi) communication, but mainly seeks potential and interest to grow in these areas. The critical importance of resilience was emphasized at multiple points in the interview and the employer shared the lack of it across the students. From the employer's perspective, the graduate trainee programs were regarded as a long-term opportunity for sustainable talent acquisition which requires an investment of time and resources and they are seeking talent retention for which resilience from the graduates was a key requirement. The transition from university to work-life was regarded as a big change and it is the first year at the job that demands perseverance from the graduates and that is where most give up, and in this particular case, the employer mentioned the myriad of growth opportunities once they get through the first 2 years at their organization. The employer did highlight that although critical, it is challenging to assess resilience during the recruitment process (*I think, resilience is one of those things whereby; I think a lot of students, they struggle with the transition from university to the workplace because I think it's the expectation set and they're often not used to getting the feedback, they're not used to having all the deadlines at them at once, and by deadlines, I mean, five things in an hour as opposed to five projects or bits of work to hand it in a week*).

Among the skills checked / expected in the recruitment process, the employers from the second interview mentioned: customer service, problem solving, agile thinking, and especially communication skills, being able to show that you are a team worker and show that you're a problem solver in and give your view on that and examples if possible (...) We are looking for young people coming into the organization with that kind of inquisitive mind and having the

*ability and the confidence to be able to question things and really challenge us. Among the skills important in maintaining employment, they mentioned: active attitude - willingness to learn/grow, motivation to work and further development (an energy, an enthusiasm), being self-aware, communication skills and teamwork. Both in the recruitment process and later (at work), it is important to show your strengths and skills in various situations and contexts. The critical importance of resilience and adaptability (flexibility) was emphasized at multiple points in the second interview (The ability to pivot to adapt an and to kind of take a constructive role in change is increasingly important; ability to reconfigure your skill set and transfer it into other places proactively is probably going to be increasingly important ... abilities to respond to change abilities, respond to changing deadlines, ability to respond to changing priorities.)*

Among the skills checked / expected during applying for a job, the third employer mentioned culture fit (good match for organization and making a positive contribution to the corporate culture) and personality. Among the skills important in maintaining employment, the employer mentioned ambition and willingness to learn/grow. In addition, the respondent emphasizes the importance of communication skills.

**The key attributes** that emerged from first interview include (i) resilience, (ii) communication & collaboration, (iii) commercial awareness, (iv) willingness to grow; from the second interview they are (i) flexibility, (ii) resilience, (iii) communication & team working, (iv) self-awareness, (v) willingness to learn/grow, (vi) passion & enthusiasm; from the third interview include (i) willingness to learn & ambition, (ii) initiative/independence, (iii) culture fit, and (iv) personality.

**The key Barriers** in the labour market include in first interview (i) demand-led market for graduates, (ii) tough competition with stringent assessment across industries, (iii) students lack of awareness. Students' lack of awareness was highlighted across multiple facets of employability ranging from (i) transferability of their academic qualifications across various management roles, (ii) applying for roles they do not fully qualify, (iii) under-utilization of available developmental resources, that is career service at their university, (iv) naivety of the challenges; in second interview (i) the lack of recognition for companies to which it applies, (ii) the ability to be able to really tailor your application to the employer and to with the job, (iii) the ability to communicate your abilities / present your strengths; according to third interview students lack initiative the most.

**First interviewee recommended to overcome the barriers** (i) in-depth competency audit, (ii) peer-to-peer model for career ambassadors- Fresh graduates' stories and experiences in the labour market, (iii) utilization of career service (*But they're still woefully under utilized and there's so many great events that all universities across Scotland's Career Service runs but they're just not used enough and you will absolutely learn something which will, which will make you more employable. But you just have to reach out and just be aware of it and so for me, the Career Services is absolutely critical*). Second one proposed (i) targeting applications and tailor your application to specific employers (*Understand this is really about doing your research and really thinking about what's out there and what actually is going to meet my needs and suit me*), (ii) being able to communicate your skills, (iii) be open minded, (iv) being confident remotely in the current climate (*we really, really need people to get more comfortable using technology to engage in that team environment remotely*), (v) building a network.

#### Summary – employability issues

All interviewees were people who deal with recruitment on a daily basis (Talent Acquisition Marketing Specialist, Manager of call for young talent program, resources team manager, meta skills development manager, person who runs his own company and recruits graduate interns regularly). Their knowledge of the issues discussed is extensive and practical. All participants emphasized the importance of communication skills (both in the recruitment process - to show skills and strengths, and in a later work). They were also repeated in all interviews social skills (collaboration, team working), including the ability to collaborate remotely and use technology - which is essential nowadays. Moreover, they agreed that the motivation to develop, the ability to learn, willingness to grow and the development of one's resources (presented in the recruitment process) is important (and sought after by employers). Most of the interviewees stressed the importance of resilience and flexibility.

#### App features

During interviews the following app features emerged as the most important:

##### Employer 1

For students:

- (i) Skills Audit for their dream employer in year 1 and then developing that skill bank with a focus towards that goal. Syncing relevant events, courses, training etc



- (ii) Digital Badges of the Progress
- (iii) Embedding it in the curriculum +making the profile development mandatory at the beginning of their academic journey at the university
- (iv) Gamification with progress levels
- (v) Interactive, Collaborative and project-based activities

#### For Employers

- (vi) Sync and Plug-in with Bigger recruitment Platforms i.e. LinkedIn, debut. careers, handshakeUK etc
- (vii) Developing students' skillset database so an employer can search profile CVs via skill sets.

#### Employer 2

- Have activities leading to end points (medium and long term)
- Allow them to do their own research about roles to apply for
- Log/evidence their experience and skills
- Prompts at specific time points
- Emphasis on selling/describing their skills
- Networking is also important in identifying opportunities, but maybe not specifically for this app

#### Employer 3

- From students' points of view having a mobile based app a good idea, might need some gamification to get them to engage, and specific tasks for them to engage with. Would be a good idea if some aspects of the app encouraged them to reflect on what they'd learnt and how they'd developed so that they could use this to showcase to employers their ability to grow and learn.
- From employers' points of view just a text-based app with a certificate as output would not be useful. Might be useful if students would use the app to compile a multimedia portfolio of their abilities which they could then speak to in an interview. Might also be useful for recruitment if employers could advertise positions/roles directly to students through the app.

## 6.13. Individual interviews with employers in Norway

### 6.13.1. Participants and procedure

There were three employers who gave interviews. The first was employer with experience both in industry and academics. The second was Head of Organisation Learning/ competence development in a global company. The third was Chief Financial Officer (CFO) at a research institute.

### 6.13.2. Results

#### Skills required by employers

The interviewee 1 emphasized that from the perspective of the employer, three things are important: Firstly, does the candidate have formal skills (necessary to perform a given job), secondly - does he have experience supporting this, and thirdly - is he / she motivated to perform the job (to teach development) and whether it fits in with the company's culture (*when you employ people you consider three things. One is, do you have the skills to do that job and then we think about the formal skills? Like if you're supposed to be a researcher in IT do you have a proper education, IT education, right. Maybe do you have some experience that support that? And the next question is, will you do their job? Like are you motivated for doing this job? and then the third question is, do you fit into our work force?*). Among skills expected by the employers, there were mentioned: collaboration and interpersonal skills (*...some jobs require collaboration, and then I think it is easy. It is important that you have interpersonal skills. Like example, or that you are interested in other people and our interests are good at communicating*), communication skills, personal skills (analytical thinking, open mind, positive attitude, awareness of strengths and weaknesses, independent), willingness to learn and motivation. The interviewee also emphasizes the importance anticipation in social activities and skills learned through experience like punctuality, teamwork etc.

Among the skills expected by the employer, the interviewee 2 mentioned social skills and culture fit (*at the same time they will have to cooperate because 99, or 98% of all people they have to cooperate very closely with the colleagues. And therefore, it is very important that they have social skills too for the job ... There are also other skills that you have, attitudes or values, that really runs similar with the values of the company. ... what are their attitudes and*

values towards other people? That is very important in a diverse working environment). In addition, the future employee should be an expert in his domain.

Among the skills expected by the employer, the interviewee 3 mentioned proactivity and openness to other people (*I think employers would normally look for the proactive type, the type that is open to other people able to handle different types of people and tasks*). It is also important that the employee deliver results and input to as a member of a team.

### Features of job application

According to the employer 1, when applying for a job it is important to know the specifics of the company and the position (requirements) (*...also be curious about the employer and think about the situation as there should be a good match both for the employer and the employee. So be more called to see if this is also a good fit for them*). It is important to be open during the interview situation. The interviewee also draws attention to gender differences visible in applying for a job (*So, I think there is a gender difference here. I think that girls tend to be more reluctant about themselves and not as confident. So, I think that girls can be more confident about that they have to seek an employer that also skilled for them. I tend to see that the boys think that they have more confident and feels that sometimes that they bring more into the workplace that they don't see the lack of experience as a barrier*).

The employer 2 emphasized the importance of having a realistic image of their abilities and ambitions (*I think it is important to show the whole range of experiences that could be successful in your job. But it is also very important to be clear on what it is. So, you do not try to oversell yourself because that would be a disappointment for both parties later on. If you are not, or if you don't really have a realistic picture of what you really can achieve*). Moreover it is important willingness to learn (*And I think also you need to know that whatever education you have when you come to a new company, there are still a lot of things to learn...*) and motivation.

The employer 3 did not refer to specific skills useful in applying for a job. Listed more general skills important for the employer / being employed (repeated at different interview sites). Interviewee mentioned: open mind, be able to work in team, communication skills, formal education, willingness to continue learning and be fearless of competition.

### Skills for keeping employment

Among the skills needed for keeping job, the employer 1 mentioned contribution to organization, motivation and ambition. Second employer indicated contribution to organization, motivation and ambition (*Um, and it's very important to see whether they are able to really adopt to the to the requirement that we have, but at the same time I would also say that it's important for us to see what they could contribute to the organization, which we didn't know when they started, also because every person is unique and they have skills and they have motivations and ambitions that could be add on to what we really expected*). The third one pointed out achievement and presentation of results (motivation), willingness to learn more and self-sufficiency (*It is important that they show results, and a willingness, we have follow-up meetings regularly with new employees, where we have very specific questions related to their training and what they have learned so far and if there is something that we could help them more with in terms of getting to a stage where they can be self-sufficient. Also, at work so that we do not always have to feed them with the tasks that they can find and see and understand the business*).

### Barriers in applying a job

From the perspective of the first interviewee, the main barriers on the part of potential employees are ignorance of the company's culture (*So, the factor in the existing workforce places a major role here and I think it's important to consider that to do some research and find out you know what are the group that I'm going into and then reflect on how will I fit in there? It's important*) and unawareness of your strengths and personal skills. Second interviewee drew attention to problems related to the organization of the recruitment process, such as not recognizing the candidate's skills and confronting the expectations of both the employer and the employee. The cost of bad recruitment is high and therefore, companies need good and effective recruitment process. The employer 3 indicated as the main difficulty in applying for a job lack of self-confidence (*It could be self-confidence and being you out on the job market. Being insecure ... They should believe in themselves and. the confidence in a job interview situation. Yes, I think it's about confidence*).

### Summary – employability issues

All participants emphasized the importance of social skills (be able to work in team, openness to other people, collaboration) and willingness to learn. They were also repeated in all interviews motivation and ambition. Most of the interviewees stressed the importance of communication skills and contribution to organization.

### App features

Among app features employers mentioned personality assessment, assessment of strengths, interaction with app, contact to employer, record added skills during job tenure or when job changed, detailed profile. The app should be interactive, with subscription for employers, having available opportunities, easy to use, logical, with support for employers, based on academic background, with possibility to add experience, proof of achievements and references, introduced skills set.

## **6.14. Individual interviews with employers in Greece**

### ***6.14.1. Participants and procedure***

There were three employers who gave interviews. The first is expert on labour market management, monitoring of European developments and business needs. The second is expert on human capital consulting. The third is Head of Staff Training and Development.

### ***6.14.2. Results***

Results of the interviews are compiled in the table 5. The data are presented in the way that from the general interviews the most important factors are extracted. Example quotes are presented as well.

Table 5

*Results of Interview for employers in Greece (Employer 1, [Employer 2](#), [Employer 3](#))*



Categories	Factors	Quotes		
Interviewee characteristic		Since 2010 I am working in the field of employment and labor market in the <b>Hellenic Federation of Enterprises</b> ( <a href="https://en.sev.org.gr">https://en.sev.org.gr</a> ). I am leading the department of Human Resources which is dealing with various labor issues, collective bargaining agreements and the relations/negotiations with social partners.	I <b>Executive Director of Employment Solutions Division of ICAP Group</b> , a company which offers consulting services, especially human capital consulting to department and we use various questionnaires in order to conduct surveys... I am also working with the <b>Association of Private Employment Companies</b> ;	I have been working at <b>LANDIS</b> (a <b>multinational company</b> factory) for the last 4 years. I am the <b>head manager</b> in Greece, and I also participate in as a contact person in many multinational teams especially in HR of the factories in Europe and Africa. I'm a <b>human resources manager</b> .
Employability skills	<ul style="list-style-type: none"> <li>- Acquisition of entrepreneurial knowledge during studies</li> <li>- Soft skills, such as project team coordination, communication skills, project management, time management</li> <li>- culture of cooperation</li> <li>- confidence in public exposure</li> <li>- development of digital skills</li> <li>- cultural awareness (understanding the culture of workers from different cultures working together in multinational companies)</li> <li>- flexibility</li> <li>- adaptability</li> <li>- work ethic</li> <li>- communication skills</li> <li>- organizational skills</li> <li>- team spirit, culture of cooperation</li> </ul>	<p>Entrepreneurship courses should be included in Universities... how I run/set up a business, how I work in a business, how to help young people to run start-ups, to join a new business etc.</p> <p>Another important element that has been reported in our studies is young people to acquire horizontal skills or soft skills...</p> <p>...we would like the engineers, the graduates of the Polytechnic Universities, to be able to coordinate a project and project teams, to communicate with people, to start management initiatives, to handle a project, to</p>	<p>Flexibility, so that, when someone gives us some instructions to do some things, we look for more and not just follow the instructions they give us...</p> <p>Adaptability. For example, we are now experiencing the pandemic, so we have to adapt to the new conditions and not to complain about everything. We must overcome those obstacles.</p> <p>Another important thing is work ethics. We have to work according to the law, to follow rules...</p> <p>...communication skills, how to write reports, when we have to</p>	<p>The most important thing is to be ambitious... to have a vision for the future...</p> <p>Everyone must develop these social skills; to join a team and learn to work in it... it is not as easy as it sounds...</p> <p>...the third skill is the ability to absorb information quickly, to learn quickly... visualize something, learn it and move on...</p> <p>...an openminded man that wants to change, to adapt, not easy to find skill, flexibility.</p> <p>Social skills are always important, to be a social, extrovert person</p>



Erasmus+



	<ul style="list-style-type: none"> <li>- ambition, vision for the personal working future</li> <li>- team spirit, culture of cooperation</li> <li>- adaptability</li> <li>- receptivity to change</li> <li>- communication skills initiative</li> <li>- multicultural way of thinking</li> </ul>	<p>write a report, to manage project time...</p> <p>The culture of collaboration, getting up in front of an audience and making a presentation, being criticized, responding, listening to others, those are skills that you will need in the work environment.</p>	<p>present something to our boss, to our customers, to our colleagues...</p> <p>Organizational skills are important. How we organize our work, for example, if we have to do a specific job next week, we have to be prepared...</p> <p>And it is very important that at the University, students must accomplish group work with specific goals.</p>	<p>...have the skill to estimate a situation and take initiatives</p> <p>...to be able to work with people from different cultures</p>
Job application skills	<ul style="list-style-type: none"> <li>- use of digital media</li> <li>- use applications for CV promotion, such as LinkedIn</li> <li>- use applications for CV promotion, such as LinkedIn</li> <li>- use of the University Career Office</li> <li>- use of an application that assesses the skills of the prospective employee, such as Talentoday</li> <li>- preparation of a short CV</li> <li>- good preparation for participation in a personal interview</li> <li>- use applications for CV promotion, such as LinkedIn</li> <li>- use of an application that evaluates companies, such as CLASSRoad</li> </ul>	<p>I think that digital skills are essential today. Once upon a time, we searched the newspapers every Sunday for employment ads, while today everything is done on the Internet</p> <p>A young person should know how to use LinkedIn, because there are recruitment campaigns through LinkedIn now</p>	<p>We, as a company, use the platform called LinkedIn. There are also subscriptions, we pay some money and we can and do attract people who work in other jobs. We are now talking about someone who already has some years of work experience, we are not talking about newcomers...</p> <p>The University Career Office could also organize and publish resumes of all graduates. E.g. on social media, on LinkedIn, you can find companies or people graduated from a University and see their cv, their work experience etc.</p>	<p>For the CV there are too many templates, e.g. the European CV, a very good format in my opinion. The advice I would give to a candidate is to write down a resume that includes the important things and skills he or she possess.</p> <p>During an interview, a candidate should always try to give to the person in front of them the feeling that "I have a vision for my career, I have a plan, I want to take the job, I have read carefully the description of the job that your company offers, I have understood what it is and I want to do it "... that is, to come prepared!</p>



Storage and presentation of employability skills	<ul style="list-style-type: none"> <li>- Certification of work experience during the studies</li> <li>- proof of knowledge of foreign languages from a high level University</li> <li>- Certificate of specialization from a company recognizable in the labor market</li> <li>- Certificate of participation in an Erasmus + program during the studies</li> <li>- Certificate of attendance of seminars during the studies (non-formal education)</li> <li>- certifications of attending seminars during the studies (non-formal education)</li> <li>- certification of work experience during the studies</li> <li>- presentation of skills that do not seem measurable, such as participation in a basketball team, social work, championship</li> <li>- participation in seminars, workshops, writing of papers</li> <li>- participation in an Internship, as an entry into the workplace</li> <li>- determination to send a CV even if there is no work experience</li> </ul>	<p>It is good to have working experience during your studies...</p> <p>Do you have Proficiency Certification in English? Make sure it is from Cambridge or from a well-known institution, because that is a reliable proof that you acquire this skill.</p> <p>... for Informatics? Get a Cisco network certification, that is, it is a recognized certification.</p> <p>It is good for a candidate to have attended an Erasmus project, because it makes young people get familiar with an international environment.</p>	<p>... Many young people are trying to acquire skills and get a certificate for every skill. In recent years, the most important is the "digital transformation" i.e., technology serves market needs, everything is happening in the cloud, so companies need employees with knowledge of the "digital transformation".</p> <p>Young people searching for job have to present that during their studies participated in workshops and worked in order to get experience, even without salary. On the other hand it is important to work during the summer in any job, because you gain experience of the workplace.</p> <p>Another example is the sports. Playing basketball, for example, shows teamwork and it is very important, because you play to win, learn to lose/fail, not spot to try. Team sports require discipline and so on. In the interviews we examine the formal qualifications but then we ask the participants questions, to explore their skills.</p>	<p>It's not bad to apply a CV for a job that you do not have work experience. There are companies that ask for previous work experience, so they may reject you and there are companies that prefer to train their staff.</p>
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Emphasis on employability skills	<ul style="list-style-type: none"> <li>- Investment in lifelong learning. Universities cannot hand development in labor market</li> <li>- acquiring data science skills</li> <li>- acquiring green energy skills</li> <li>- emphasis on flexibility and adaptability to maintain a job</li> <li>- tracing changes on labor market</li> </ul>	<p>University provides a way to think in a coherent way and to get familiar with certain ideas and concepts and knowledge etc. Doesn't mean we're necessarily going to apply 100% of what we learned in our studies.</p> <p>...lifelong learning ... That's the future... learning from distance...</p>	<p>Flexibility and adaptability are very important in maintaining a job... Because as technology changes, you have to adapt with it. Not in detail but everybody has to follow. Many people misclassify flexibility. Flexibility doesn't mean you'll only work long hours. It means that while circumstances are changing, that if your company has to open in new markets, e.g. in Germany perhaps you have to learn the language.</p>	<p>You have to evolve and adapt to what the market is looking for... I may not have everything labor market needs, but I can invest in training, show my strengths, enhance my skills.... I must be willing to invest and learn and expand my knowledge.</p>
Responsibilities/initiatives of State and business	<ul style="list-style-type: none"> <li>- customize of training programs from traditional form to distance learning</li> <li>- infrastructure for teleworking (and due to the pandemic)</li> <li>- meritocracy in the workplace</li> <li>- highlighting the employee's offer</li> <li>- the State cannot present a framework for linking Universities and the labor market</li> <li>- exploitation of traineeships in the context of studies</li> </ul>	<p>... Both business and the State have to adapt their programs to take place in distance mode. This means that they have to modify both the educational material and the teaching practices.</p> <p>...the challenge is to transform a training program into a program form offline mode to online... to take care of not to lose the immediacy, the communication, the knowledge transfer, the evaluation, the answer to questions...</p>	<p>... The first factor that drove people abroad was meritocracy. That was the big hurdle. You bring new ideas to the organization; you do your best and you're judged in the same way as the others that almost hasn't worked at all ... Meritocracy, here in Greece, is a big issue and it is recorded in our daily lives. It is the biggest problem, the biggest obstacle; that is why our young people have gone abroad.</p>	<p>This is my big complaint from the education community for many years ... From my previous experience at companies in previous years it was easier to find people. Nowadays, it is very difficult to find specialized engineers. We made a great deal of efforts with Academic Institutions, find potential candidates.</p>
Case studies for educational purposes about EGS	<ul style="list-style-type: none"> <li>- a case study of the stuff assessment</li> <li>- study of the case of cooperation between employees from different countries</li> </ul>	<p>... If the project is, for example, the development of a new product with colleagues, working in Sweden, Canada, etc. Besides the technical knowledge that</p>	<p>Organizational skills are very important. We ask relevant questions in interviews, depending on the position, we put the organizational skills ahead ... and</p>	<p>...training in sales, it's pretending that you are the salesman and I'm the customer, so sell me something... And if I am a "difficult"</p>



Erasmus+



- a case study of the installation of new software
- case study of the production of a new product in industry

- case study for the detection of organizational and communication skills

- tips for CV creation

- case study with role-playing individually or as a group
- writing a reply letter

employees should have, they are also required to have skills, such as excellent knowledge of English language, project management and organization, communication skills, teamwork skills, supervisory skills and presentation skills.

we run case studies ... questions like "what would you do in this case", "how would you organize your work"? In real working conditions...

We give some tips to candidates, for resume editing, what to look out for in the interview. There are surveys that write about the needs of the market for the next decades, what are the needed specialties etc. Universities could include it either in some courses or as a separate course.

client, a third person is recording how the conversation was going...

Write a letter, e.g. a high state official sent you a letter threatens with a fine, you have to answer him you have to express an argument...

## 6.15. Summary – individual interviews with employers

### 6.15.1. Summary – employability issues

Many interviewees worked in human resource management (expert on labour market management, expert on human capital consulting, head of staff training and development). Their knowledge of the issues discussed was extensive and practical. Among the employability skills, the interviewees agreed that important are: teamwork and ability to cooperate, communication skills (both in the recruitment process - to show skills and strengths, and in a later work), organizational skills (team coordination, time management), social skills (team spirit, culture of cooperation, initiative), adaptability and receptivity to change. However, besides skills interviewees named willingness to learn as crucial characteristic of future employer and commitment to employer as important. They indicated also the ability to apply theoretical knowledge in practice and the ability to present their skills and experience. Among the job application skills, the interviewees agreed that important are: use applications for CV promotion, such as LinkedIn and use other applications helpful when looking for a job, making a research (or generally use of digital media).

### 6.15.2. Summary – app features

In the case of app features, in expert opinions the most important occurred: CV building (not always in a visual form), adding job offers, user-friendly, containing teaching materials how to be a good employee, option to add opinions by employers, colleagues, students, teachers, the ability to communicate between users, individual user profile, the ability to add your own skills and evidence of their possession (e.g. training certificates), graphical representation of the progress, networking and P2P exercises.

As additional app features can be listed multimedia portfolio, tracking the learning process, short and long term goals/activities, feedback, liking, references, a career path tracking and steps needed to be fulfilled to achieve a particular job, connecting students organizations and companies, website version for administrators/recruitment staff, evidence of students' experience and skills (i.e. work or projects), different roles/profiles within the app, connection with external sources of trainings, gamification elements, interactive, collaborative and project-based activities, profiling in terms of specialization, embedding in the curriculum, assessing students in terms of educational outcomes (e.g., interpersonal competencies or personality),

skills assessing, possibility to enable project work (creating teams by a teacher and assessing students), advices for students, monitoring of learning effects, that is to modify the curriculum, informational channel about needed in the labour market skills, interaction between users (social element).

## 7. Stage 2: testing ideas with Questionnaire for students

An online survey in all partner countries (i.e., the United Kingdom, Greece, Poland, and Norway) was conducted in order to know the potential GES App users' preferences. The survey included questions about participants' age, gender, nationality, native language, university, as well as questions regarding the app. The entire content of the survey is presented in Appendix 2. The survey was conducted in English. Participation was voluntary and each participant declared his/her consent before answering the questions. The responses were collected from October 1st, 2021 to March 23rd, 2022.

### 7.1. Method

#### 7.1.1. Participants

In total, 153 students completed the survey. Their age varied from 18 to 53 with a mean of 28.5, a median of 25 and a standard deviation of 8.9. Women constituted 75.8% of the sample. A large number of participants were from the United Kingdom (43.8%); 25.5% of the sample were from Greece, 21.6% were from Poland, 5.2% were from Norway, and 3.9% were from other countries. Forty percent of the participants indicated that their nationality was British, 25% were Greek, 23% were Polish; Norwegians, Germans, and Pakistanis accounted for 2% of the sample each; the rest of the sample indicated that their nationality was either Bulgarian, Czech, Finnish, French, Indian, or Irish. Table 6 summarizes the general characteristics of the sample.

Table 6

*The General Characteristics of the Sample*

Country	<i>N</i>	% of women	Age range	Age <i>M(SD)</i>
United Kingdom	67	73.1	18–53	29.3(9.3)
Greece	39	82.1	20–50	32.8(9.4)
Poland	33	81.8	19–41	22.7(5.0)
Norway	8	37.5	21–32	25.9(3.7)
Other	6	83.3	21–34	25.8(4.4)
Total	153	75.8	18–53	28.5(8.9)

English was a native language for 41% of the sample. Other participants indicated that their native language was Greek (25%), Polish (23%), Urdu (3%), Norwegian (2%), or one of the

following: Arabic, Bulgarian, Chinese, Czech, Finnish, French, German, or Hindi (each accounting for 1%).

Participants studied at the University of the West of Scotland (45%), University of Peloponnese (24%), Cardinal Stefan Wyszyński University in Warsaw (22%), Norwegian University of Science and Technology (4%), but also at the CPE Lyon, National and Kapodistrian University of Athens, International Islamic University of Islamabad, Open University, and University of Glasgow (each accounting for 1%).

## 7.2. Results

### 7.2.1. *Preferable Way of Using the GES App*

Participants indicated how they would use the GES App. They could select one, two, or three responses from the following: (a) on a mobile device, (b) on a personal computer, (c) in a web browser. The mobile device was the most frequently selected and the web browser was the least frequently selected in the total sample. Interestingly, the popularity of mobile device and personal computer was very similar in Greece, whereas in other countries personal computers were selected less frequently than mobile devices. In Norway web browser was more popular than in the United Kingdom, Poland, and Greece. The responses provided by participants from different countries and from the whole sample are presented in Table 7.

Table 7

*The Preferable Way of Using the GES App*

Country	Mobile device	Personal computer	Web browser
United Kingdom	89.6%	37.3%	23.9%
Greece	56.4%	53.8%	15.4%
Poland	81.8%	33.3%	21.2%
Norway	87.5%	25.0%	50.0%
Other	66.7%	50.0%	66.7%
Total	78.4%	40.5%	24.2%

### 7.2.2. *General View on the GES App Functionalities*

Participants indicated how strongly they agreed or disagreed with the seven statements about main functionalities of the GES App. They used a 5-point Likert scale from *strongly disagree*



to *strongly agree*. Table 8 presents their average assessments. The statements are listed from the one with which the participants agreed the most to the one with which they agreed the least in the total sample. Participants agreed to a relatively large degree that self-reporting employability skills would help them to be aware of their strengths and weaknesses. They were mostly interested in using the app for looking for a job, which is reflected in a high agreement with the first two statements listed in Table 8. Also, students would like to be able to recommend their profile to other selected users. The last three statements in Table 8 were rated lower by participants from most of the countries, except Norway. That indicated that participants were less interested in being recommended to others or being evaluated by them.

Table 8

*Students' General Preferences Regarding the GES App Functionalities*

Statement	<i>M(SD)</i> in total sample	<i>M(SD)</i> in United Kingdom	<i>M(SD)</i> in Greece	<i>M(SD)</i> in Poland	<i>M(SD)</i> in Norway	<i>M(SD)</i> in other countries
When creating a CV in the app, I should be able to indicate what job I am looking for.	4.3(0.7)	4.4(0.6)	4.1(0.6)	4.3(0.9)	4.0(0.8)	4.2(0.4)
Entrepreneurs should be able to add job offers.	4.2(0.7)	4.2(0.7)	4.2(0.7)	4.4(0.7)	4.4(1.1)	3.8(0.8)
I believe that self-reporting employability skills will help me to be aware of my strengths and weaknesses.	4.1(0.7)	4.3(0.6)	4.0(0.8)	4.1(0.6)	4.4(0.5)	4.0(1.1)
As a user, I should be able to recommend my profile to other selected users.	4.0(0.8)	4.0(0.8)	3.9(0.8)	4.0(0.8)	4.3(0.5)	4.0(0.6)
The app should recommend me as other users' contacts.	3.5(1.0)	3.4(1.0)	3.5(0.9)	3.8(1.1)	4.1(0.6)	3.2(1.0)
Other users should be able to add a reference about me.	3.5(1.0)	3.6(1.1)	3.1(0.9)	3.6(1.0)	4.5(0.5)	3.3(1.0)
Other users should be able to evaluate my skills.	3.3(1.0)	3.5(1.0)	3.2(1.0)	3.2(1.0)	3.4(0.9)	3.3(0.8)

### **7.2.3. Specific Functionalities of the GES App**

In the last part of the survey, the participants assessed how important the different app features would be for them. They were provided with a list of 43 features and assessed the importance of each of them using a 5-point Likert scale from *very unimportant* to *very important*. Table 9 presents the average assessments in the total sample. Table 10 shows the ten most highly

important features for students from different countries. Regardless of the country, the most important features of the GES App were the following: selecting information to share with other users, personalization of the privacy of profile content, selecting users to share one's information with, and access to job offers. For students from the United Kingdom privacy-related features were the most important. For students from Greece, Poland, and Norway privacy issues were also crucial but not more important than job opportunities. Overall, the top of the list of the most important features included privacy-related features, features associated with looking for a job, creating a CV and practicing selected skills. The least important features were adjusting feedback to one's current mood, rewards for activities, social networking aspects, and visual personalization of one's profile.

Table 9

*The Importance of Potential GES App Features in the Total Sample (N = 153)*

App feature	M(SD)
selecting which information I want to share with other users	4.7(0.5)
showing me job offers that suit my interests	4.7(0.6)
access to job offers	4.6(0.7)
personalization of the privacy of profile content (who and what can see my entries)	4.6(0.7)
selecting which users I want to share my information with	4.6(0.6)
having contact with real career advisors and employers	4.5(0.6)
indicating what tasks and skills are required for a given position	4.5(0.6)
availability of learning materials about skills and how to improve them	4.5(0.7)
adding skills to my profile by myself	4.5(0.7)
template for CV creation	4.4(0.7)
adding an experience to my skills	4.4(0.7)
exercises to practice job interviews based on my skills and my dream job	4.4(0.7)
containing materials teaching me how to create a CV	4.4(0.7)
possibility to download the app from the Appstore and Googleplay	4.4(0.9)
hints on how to practice my skills in real-world like situations	4.4(0.7)
getting recommendations for which skills I should develop to get my dream job / position	4.4(0.7)
indicating the gap between my current skills and my goal, such as dream job	4.3(0.8)
availability in your native language	4.3(1.0)
defining dream job and practicing toward it	4.3(0.7)
evaluating the level of my skills development	4.3(0.7)
exporting data from my account to my CV	4.3(0.9)
videos to help me learn particular skills	4.3(0.8)
adding a reference to my skills	4.3(0.7)
availability of general repository from which I can choose skills for myself	4.2(0.7)
quizzes to help me learn particular skills	4.2(0.8)

App feature	<i>M(SD)</i>
adding materials confirming my skills	4.2(0.8)
reminders and notifications i.e. about learning materials, unfinished tasks and deadlines	4.0(1.1)
possibility to contact other users	4.0(0.9)
a personal 'coach' (support within the app) advising on the next individual steps in the application	4.0(0.9)
seeing statistics for my achievements so far	4.0(1.0)
mini-games to help me learn particular skills	4.0(1.0)
showing my skills to others	3.9(1.0)
keeping some skills private	3.9(1.0)
adding a profile picture	3.7(1.1)
registration to the app through Google accounts, Apple accounts, Facebook, etc.	3.7(1.2)
adding posts visible to my community	3.7(1.0)
rewards for regular self-reporting and sharing skills in public repository	3.6(1.2)
rewards for using educational materials	3.5(1.1)
visual personalisation of your profile, i.e changing colours	3.5(1.2)
social networking aspects as giving feedback, liking	3.4(1.0)
possibility to recommend what skills other users have	3.4(1.0)
gather points for activities within the app	3.3(1.3)
asking about my current mood to adjust feedback	3.3(1.2)

Table 10

*The Most Important Features of the GES App in Different Countries*

App feature	<i>M(SD)</i>
<b>United Kingdom (<i>n</i> = 67)</b>	
selecting which information I want to share with other users	4.7(0.5)
personalization of the privacy of profile content (who and what can see my entries)	4.7(0.6)
selecting which users I want to share my information with	4.6(0.6)
showing me job offers that suit my interests	4.6(0.7)
having contact with real career advisors and employers	4.6(0.5)
availability of learning materials about skills and how to improve them	4.6(0.6)
access to job offers	4.6(0.8)
template for CV creation	4.5(0.7)
exporting data from my account to my CV	4.5(0.6)
indicating what tasks and skills are required for a given position	4.5(0.6)
<b>Greece (<i>n</i> = 39)</b>	
showing me job offers that suit my interests	4.7(0.5)
selecting which information I want to share with other users	4.7(0.5)
access to job offers	4.6(0.5)
selecting which users I want to share my information with	4.6(0.5)
personalization of the privacy of profile content (who and what can see my entries)	4.5(0.9)
availability of learning materials about skills and how to improve them	4.5(0.6)



App feature	<i>M(SD)</i>
having contact with real career advisors and employers	4.5(0.7)
videos to help me learn particular skills	4.5(0.6)
exercises to practice job interviews based on my skills and my dream job	4.5(0.7)
possibility to download the app from the Appstore and Googleplay	4.4(0.8)
Poland ( <i>n</i> = 33)	
access to job offers	4.8(0.5)
showing me job offers that suit my interests	4.8(0.4)
selecting which information I want to share with other users	4.8(0.4)
personalization of the privacy of profile content (who and what can see my entries)	4.8(0.4)
adding skills to my profile by myself	4.6(0.7)
having contact with real career advisors and employers	4.6(0.7)
possibility to download the app from the Appstore and Googleplay	4.6(1.0)
selecting which users I want to share my information with	4.6(0.7)
indicating what tasks and skills are required for a given position	4.6(0.6)
getting recommendations for which skills I should develop to get my dream job / position	4.5(0.5)
Norway ( <i>n</i> = 8)	
indicating what tasks and skills are required for a given position	4.8(0.5)
adding skills to my profile by myself	4.8(0.5)
selecting which information I want to share with other users	4.6(0.7)
getting recommendations for which skills I should develop to get my dream job / position	4.6(0.5)
access to job offers	4.6(0.5)
personalization of the privacy of profile content (who and what can see my entries)	4.5(0.8)
selecting which users I want to share my information with	4.5(0.8)
adding an experience to my skills	4.5(0.5)
adding a reference to my skills	4.5(0.5)
containing materials teaching me how to create a CV	4.5(0.8)
Other ( <i>n</i> = 6)	
selecting which information I want to share with other users	4.7(0.5)
indicating the gap between my current skills and my goal, such as dream job	4.7(0.5)
selecting which users I want to share my information with	4.5(0.5)
getting recommendations for which skills I should develop to get my dream job / position	4.5(0.5)
indicating what tasks and skills are required for a given position	4.5(0.5)
personalization of the privacy of profile content (who and what can see my entries)	4.3(0.5)
evaluating the level of my skills development	4.3(0.5)
hints on how to practice my skills in real-world like situations	4.3(0.5)
access to job offers	4.3(0.8)
adding a profile picture	4.2(1.2)

### 7.3. Summary and Conclusions

We presented the results of the survey in which students from different European countries were asked about their preferences regarding the app aimed to help them to develop graduate employability skills and strengthen their position in the labour market. Students who participated in the survey were mostly in their twenties and the sample comprised of more women than men. The sample was dominated by students from the United Kingdom, Greece, and Poland (90,9%). They represented mostly three universities: University of the West of Scotland, University of Peloponnese, and Cardinal Stefan Wyszyński University in Warsaw. The results of the survey indicated that students would prefer to use the GES App on their mobile devices, but some of them would be also interested in computer and web versions of the app. They agreed that self-reporting their employability skills would help them to recognize their strengths and weaknesses. Students' responses to other questions suggest that they would be primarily interested in an app, which could give them access to job offers and let them have contact with real career advisors and employers. They hope for help in creating a CV, suggesting them which skills they should practice and giving them tips on how to do that. They did not assign high importance to app features related to rewards, gamification, social networking, or visual personalization of a profile. They were more interested in practical aspects, such as possibility to download the app from the Appstore and Googleplay or the app availability in their native language.

The results of the survey were fairly similar among the countries. However, some small differences between the countries emerged. We do not pay much attention to them because of large differences in sample sizes. In general, the sample sizes were small and cannot be considered representative for any country (especially for Norway). One of the explanation of low number of participants from Norway is that students and staff are experiencing survey fatigue and therefore it has been hard to recruit students to respond to surveys. Nevertheless, the total sample size was large enough to make some general conclusions on the students' view on the GES App functionalities. While interpreting the findings, one should remember that the conclusions are based mostly on the responses provided by students from the United Kingdom, Greece, and Poland. These countries differ in their location and culture and therefore the conclusions may be quite representative for European students.

## 8. Discussion

The document addresses the graduate employability issue and requirements for the app on employability from the perspective of potential end users, mostly students, but also teachers and employers. The aims of the research were to find (i) how stakeholders see employability skills, the job recruitment process, students' situation in the labour market and (ii) whether stakeholders would find the projected app useful in the employability skills development, planning and storage. The research was conducted with a mixed method approach, comprising both, quantitative and qualitative methods. It enabled us to collect extensive and in-depth data from direct, open-ended answers as well as statistical data about ratings of desirable app features. The collected data came from focus groups, individual interviews and a survey conducted on students, teachers and employers. In sum, 228 people took part in the research what gave an enormous set of data, opinions and ideas. In all four of the partners countries the same studies were conducted with the usage of the same scenarios and survey. To get as much insight as possible into the topic, different methods of data analysis were implemented for particular studies. All of them confirm the similarity of the obtained results. As detailed analysis of wide range of issues was presented above, in this section we provide the most important features for the future GES App.

### 8.1. Graduate employability skills

One of the main aims of the research was to get to know respondents' knowledge and attitude to employability. From the collected data a consistent picture of employability emerges. Respondents highly appreciate the importance of employability skills during job recruitment and future job maintenance. In the statements of all participants, repeatedly important competences were communication skills, ability to cooperate, flexibility, digital skills and knowledge of foreign languages. However, employers paid more attention to the willingness to work, ability to learn, motivation and ambition than work experience while students often considered the later as crucial in applying for a job. Both, students and employers agreed that the education system still supports more knowledge than skills, which mismatches real labour market requirements. Students are not sure what skills they should have after their studies while employers see that students lack employability skills, they do not always know how to manage their employability development and how to evidence possessed skills. In that way, the

designed app could fill the gap by creating a platform, where skills can be collected together with their evidences, and students can plan their desired job and acquire missing skills to become well prepared for their dream profession. The functionalities mentioned above were the most often indicated as crucial. Additionally, respondents claimed that the app should provide job offers platform with possibilities to match employers with future employees. In a lot of the statements the contact with a real person (i.e., kind of a career coach, which could be an employer giving feedback, a professional career counsellor or at least any kind of feedback given by other app users) was mentioned as very important in the employability development.

## 8.2. App features

Among the most crucial app features several categories can be distinguished. Firstly, regarding the skills portfolio, the respondents proposed as important some kind of a skills repository from which it will be possible to choose possessed skills, the option for adding their own skills, especially industry skills, but also adding evidence of skills considered as highly valuable. What is more, there occurred ideas to implement options for assessing the advancement of possessed skills. The second group of features concerns desired jobs. As students lack the awareness what skills are required at particular positions, the ideas emerged to provide in the app a set of jobs with their description, a list of crucial skills and ways to present them. Going further, the aspect of skills development was indicated as very important. Students wanted the app to contain training materials to enable the acquisition of missing skills. A desired feature would be also some kind of skills or personality assessment, which provides information about strengths and weaknesses. Another extremely important category of the app features that was mentioned is networking, the possibility to be in touch with career experts and other users. Respondents mentioned giving and getting feedback, possibility to contact employer, forum, liking and sharing content. The next group of crucial app functionalities may be named as job application preparation. Students wanted the app to provide them tips and answers for the most popular problems occurring during job application, to enable practicing job interview, to help with recruitment document preparation, maybe some CV templates and phrase bank with most efficient statements.

In the case of universal app features, what is the most important, the GES App should be user-friendly, easy-to-use, has free access, supports data protection, contains personalization



options, be possible to be downloaded from general repositories (easy access), attractive, not very demanding and enable communication.

### **8.3. Conclusion**

The results of the conducted research suggests that stakeholders see the need for the app on employability skills and believe the final product of the GES App project will provide a valuable resource for supporting students and graduates in preparing for their job applications and maintenance of a job. It is worth noting that to be useful the app needs to be attractive, efficient and even become the official tool introduced by universities. The collected data also provided guidance about what the app should be like, and what app features potential users would like to see. That was perceived as crucial is the focus on the possessed skills presentation, the later practicing and possibility to communicate with others.

## 9. Appendices

### Appendix 1: Instructions and scenarios for qualitative research study

O3 User  
requirements analysis  
Qualitative research - interviews

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## 1. Instructions for conducting interviews

1. We recommend conducting interviews using a videoconference platform (CiscoWebex or Zoom). This program must have an interview recording feature.
2. Additionally, before recording the interviews, we should find out if there is a program for transcribing the recording in the university's resources. The use of this program can speed up the work on preparing interview materials for analysis.
3. We conduct group and individual interviews according to scenarios, depending on the target group:
  - a. FGI 1 – Students
  - b. FGI 2 – Academic teachers
  - c. IDI 1 – Academic teachers and employees – university career office
  - d. IDI 2 – Employers or recruiters
4. **During FGI interviews**, remember to record whose statement it is, use the respondent's name or the number. In Zoom, you can, as a moderator, rename users.

## 2. FGI – Instructions

Survey for the recruitment of students

FGI – 12 focus groups, 3 groups per country, 2 with students and 1 with teachers

1. Students - 2 FGI, 5 people for one FGI (in total 10 students)
2. Academic teachers - 1 FGI, 5 people for FGI (in total 5 teachers)

***All notes in italics are stage directions to help the moderator***



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## 2.1. FGI – Focus group questions for the students

### Information about respondent:

*Age, gender, education, job experience*

### Opening questions

*(These questions are intended to find out something about whether the respondents have already used any applications, what they liked and what they did not like about them. Opening questions serve as an introduction to FGI).*

1. What type of apps or programs do you use and like the most? Do you use them on mobile devices or computers? Could you give an example of the app you like?
2. What features of this app/these apps make it/them appealing to you?
3. Have you ever used an application related to self-development? If so, what kind of app did you use?
4. Have you ever used an application related to education? If so, what kind of app was it? How did you like using them?

### (0) Students perspective on their plans and skills

5. What are your plans in the field of work? If you don't have any, can you say why?
6. Whether or not you have career ideas, what are the skills you think you will need to get a job in your profession / in future work? / What do you think, are they the only skills you will need in future work? *(answers will likely depend upon whether students have a target career area or not)*
7. What is your idea of the kinds of skills you are developing as a result of your course of study? What skills are these?

*If there is no information about employability skills, you should ask additional questions:*

- How do you think, do you have the skills and knowledge you need to develop CVs, application forms, succeed at interviews and assessment centers, for example? If so, what skills do you have?
- Have you learned anything during studies about how to apply for a job? If so, where and how? *(on courses at the university or outside them)*

### (1) Knowledge of, and attitudes to, GESs

**[There moderator should provide the definition of employability skills, on the base of O1]**

8. What do you think the situation on the labor market is nowadays? What sort of skills do you think employers are looking for?
9. What do you consider as important in applying for a job? *(What kind of differences are between the employers' and the applicants' perspectives?)*
10. What are the skills you think you will need to maintain employment? *(What kind of differences are from the employers' or the applicants' perspective?)*

*If there is no information about employability skills, you should ask additional question:*



- Do you consider employability skills as important to find and keep a job? If so, which are important

11. What do you think are the main barriers regarding applying for a job?
12. What do you think are the main barriers regarding maintaining employment?

## (2) A form of employability skills storage and presentation

13. How do you keep track of the skills you are learning/improving?
14. What would be useful as a certificate of having employability skills after finishing education?
15. Do you think an app could help you do that? Why/why not?

*Additional questions:*

- How can an app collect and store information on employability skills?
- How do you think employability skills can be presented in a digital form?
- How do you think an app (in which one collects and stores information on employability skills) might be helpful in looking for a job?

## (3) App features

**A brief introduction.** The purpose of this research is to create an application that will help in developing and gathering employees skills and competitions. That is why we conduct interviews with future users of such an application, asking about their needs.

16. Would you prefer to use such an app on a laptop, on a mobile device or both of them? Why/Why not?
17. Do you know about any app that might be helpful in storage and presenting employability skills?
18. Do you see any problems with using apps to help young people in storage and presentation of employability skills?

**Now we have a few more questions about the features and your ideas about this type of application (...)**

19. What kinds of features do you think are important in such an app?
20. What kinds of tasks do you think can be useful in such an app?
21. How often should the activity in an app be required?  
[Next question is especially important and all aspects should be included.]
22. How do you think, how the app should change by ...
  - a. Those new to the job market versus those with employment experience?
  - b. Whether users have any disabilities or special needs?
  - c. Gender?
23. What features and content would make the app more appealing to you?
24. Would you find the app more attractive if it contains some gamification features (e.g., progress bar or achievements)? / Would you be interested in playing an online game related to the app? / Would you be interested in playing online if the app contains features gamification related?



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25. Is there anything else you would like to say?

## 2.2. FGI – Focus group questions for the academics

### Information about respondent:

*Age, gender, occupation, education, citizenship, job experience, duties at work*

### Opening questions

*(These questions are intended to find out something about the respondent's opinion on that: students usage of applications, students' performance during studies etc. Opening questions serve as an introduction to FGI).*

1. What do students know about applying for a job?
2. Do students learn anything during education about how to apply for a job? If they do, how does it look from your perspective?
3. Are you aware of any apps that students use as part of their education or when applying for a job?

### **(1) Knowledge of, and attitudes to, GESs**

**[There moderator should provide the definition of employability skills, on the base of O1]**

4. How important is skills development in the context of the course you teach?
5. How is skills development addressed in the general curriculum (as part of learning in modules and/or in assessment methods, for example)?
6. What activities (if any) do you use to engage students in thinking about skills development?
7. Which employability skills are developed during the degree program/the course you teach?
8. What opportunities do students have to learn how to develop CV and succeed at a job interview during their degree program?

### **(2) A form of employability skills storage and presentation**

9. What would be useful as a certificate of having employability skills after graduation? How should employability skills be documented?
10. How can employability skills be presented in digital form?
11. What do you think could make skills development awareness and recording easier and/or more effective?
12. What would prevent you from engaging with this sort of activity? *(For example, would you need some training/awareness-raising in employability issues and/or curriculum development?)*

### **(3) App features**

**A brief introduction.** The purpose of this research is to create an application that will help in developing and gathering graduates skills and competitions. That is why we conduct interviews with future users of such an application, asking them about their needs.





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13. What do you know about any app that might be helpful in storage and presenting employability skills?
14. How can an app collect and store information on employability skills?
15. How do you think an app (in which one collects and stores information on employability skills) might be helpful in teaching?
16. Do you see any problems with using apps for storage and presentation of graduates employability skills from teachers' perspective?

***Now we have a few more questions about the features and your ideas about this type of application (...)***

17. What features of an app would make it useful as a teaching aid?
18. What features and content would make the app more appealing to you?  
[Next question is especially important and all aspects should be included.]
19. How do you think, how the app should change by ...
  - a. those new to the job market vs. those with employment experience?
  - b. Whether users have any disabilities or special needs?
  - c. Gender?
20. Is there anything else you would like to say?

### 3. IDI – Instructions

IDI – 12 interviews – 3 per country - lecturers, career and employers office (HR)

1. 2 interviews – 1 with Academic teachers and 1 with University employees – University career office
2. 1 interview – Employers or recruiters

***All notes in italics are stage directions to help the moderator.***

***Support questions – are a suggestion for the moderator, it is not necessary to ask them all. It is important to talk to the respondent on the issues defined as "What we would like to know".***

***Sometimes there is a note to ask all questions or IMPORTANT.***



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### 3.1. IDI – Interview questions for the academics/university employees – university career office

#### **Information about respondent:**

*Age, gender, occupation, education, citizenship, job experience, duties at work*

#### **Some opening questions – Issues to be addressed:**

- Please, try to describe how students' performance on the labour market is connected with your job? (Please, try to describe how knowledge or attitudes to employability skills was connected with your job?)
- What is your experience with graduates applying for a job?

#### **(1) Knowledge of employability skills**

**[There moderator should provide the definition of employability skills, on the base of O1]**

What we would like to know: what respondents know about employability skills, what kinds of employability skills they consider as important etc.

##### Support questions:

- What do you consider as important in applying for a job? And what is not important?
- What do you consider as important in maintaining employment? And what is not important?
- What do you think, what sort of skills employers are looking for?
- Which employability skills are crucial for finding and keeping a job?

#### **(2) Attitudes to employability skills**

What we would like to know: how employability skills are considered by superiors, do they see employability skills as important on the labor market etc.

##### Support questions:

- Do you consider employability skills as important to find and keep a job? Why?
- How can students make use of their employability skills on the labour market?
- What do you think are the main barriers regarding applying for a job? Why?
- What do you think are the main barriers regarding maintaining employment? Why?

#### **(3) Graduates on the labour market**

What we would like to know: what are graduates' attitudes toward applying for a job from university staff perspective

##### Support questions:

- What do students learn during university education about how to apply for a job?
- What do students know about applying for a job?
- How do students make decisions about future work?

#### **(4) A form of employability skills storage and presentation**



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What we would like to know: how graduates are expected to present employability skills after higher education process, how they present their skills and competences

Support questions:

- What would be useful as a certificate of having employability skills after graduation? How should employability skills be documented?
- How can employability skills be presented in a digital form?
- How can an app collect and store information on employability skills?
- What do you think could make skills development awareness and recording easier and/or more effective?
- What would prevent you from engaging with this sort of activity? (For example, would you need some training/awareness-raising in employability issues and/or curriculum development?)

### (5) Application features

What we would like to know: what should the app obtain to be attractive and useful for teachers and university employees (university career office)

Support questions:

- What kind of features and tasks are important in such an app? (for teachers, for university employees or university career office)
- What type of apps do you think is most suitable for your work with students?
- Would you prefer to use such an app on a laptop or on a mobile device?

### III. Summary

*Summarizing, paraphrasing, structuring of information obtained.*

*Is there anything else you would like to say?*

- In this context, what we talked about, do you have any other ideas or comments?

## 3.2. IDI - Interview questions for employers

### Information about respondent:

*Age, gender, occupation, education, citizenship, job experience, duties at work*

### Some opening questions

- Please, try to describe how students' performance on the labour market is connected with your job? (Please, try to describe how knowledge or attitudes to employability skills was connected with your job?)
- What is your experience with graduates applying for a job?

### (1) Knowledge of employability skills

[There moderator should provide the definition of employability skills, on the base of O1]



What we would like to know: what respondents know about employability skills, what kinds of employability skills they consider as important etc.

Support questions:

- What do you consider as important in applying for a job? And what is not important?
- What do you consider as important in maintaining employment? And what is not important?
- What do you think, what sort of skills employers are looking for?
- Which employability skills are crucial for finding and keeping a job?

## **(2) Attitudes to employability skills – All these questions are important to ask employer or recruiter**

What we would like to know: how employability skills are considered by superiors, do they see employability skills as important on the labor market etc.

Support questions:

- How can students make use of their employability skills on the labour market?
- What do you think are the main barriers regarding applying for a job? Why?
- What do you think are the main barriers regarding maintaining employment? Why?

## **(3) Graduates on the labour market – All questions are important, ask a employer or recruiter**

What we would like to know: how graduates deal in the labor market just after finishing education, what is important in applying for a job from employers perspective; how hiring situation looks like

Support questions:

- What does the labor market look like for today's college graduates?
- What is your experience of graduate applicants? Do graduates confidently evidence the skills that will be required in job?
- What are the key skills that graduates should be able to confidently evidence during a job interview? What else is important?
- In your perspective, how important is luck or coincidence in the choice of employment?
- What can you advice a student, who is still studying to do to make it easier to find a job after graduation? (to be competitive on the labour market?)
- **IMPORTANT** What employability skills are graduates missing the most?

## **(4) A form of employability skills storage and presentation**

What we would like to know: how graduates present their skills and competences in the eyes of employers and requirers

Support questions:

- What would be useful as a certificate of having employability skills after graduation? How should employability skills be documented?
- Would it be helpful to have a graduates' portfolio of some kind that could be shared and/or discussed with an employer? What else would be helpful?
- How would you like students to present their employability skills during recruitment?



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- How can employability skills be presented in digital form?
- Do you know of any app that might be helpful in storage and presenting employability skills?
- What do you think could make skills development awareness and recording easier and/or more effective?
- What would you like to know about the applicant's employability skills from such an application?
- What would prevent you from engaging with this sort of activity? (For example, would you need some training/awareness-raising in employability issues and/or curriculum development?)

#### **(5) Application features**

What we would like to know: what functionalities should the app have to be attractive and useful for employers and recruiters

Support questions:

- What kind of features and tasks are important in such an app?
- What type of apps do you think is most suitable for you?

#### **(6) Usage of application in applying for a job**

What we would like to know: whether the app could be useful during hiring process

Support questions:

- To what extent and how could the application be useful during recruitment? / Do you think an app might be helpful in looking for a job?
- Do you see any problems with using apps to help young people in storage and presentation of employability skills? What problems do you see?

#### **(7). Summary**

*Summarizing, paraphrasing, structuring of information obtained.*

- In this context, what we talked about, do you have any other ideas or comments? *Is there anything else you would like to say?*

## Appendix 2: Stage 2 Questionnaire for students

### Instruction

The survey you are attending is a part of the GES App project: Developing a Graduate Employability Skills App (<https://ges-app.com/>). Our aim is to develop an app to allow students to plan, record and evidence the acquisition and development of graduate employability skills (GESs) throughout their university journey. GESs are practical, transferable, graduate, level abilities over and above any specific discipline content. As research has shown, they play an important role in the employee recruitment and later work maintenance.

The GES App will contain a GESs repository, a space for acquiring and developing GESs as well as career counselling aspects. Below, we have some questions about your expectations from and preferences about such an app. Please read every item carefully and answer as you see fit. Remember, for us your opinion is extremely valuable and unique. The research only makes sense when respondents are honest with us.

### 1 I would use the GES App on: (multiple choice question)

- a) mobile device
- b) personal computer
- c) web browser

	I strongly disagree	I disagree	I do not know	I agree	I strongly agree
2 I believe that self-reporting employability skills will help me to be aware of my strengths and weaknesses.	1	2	3	4	5
3 When creating a CV in the app, I should be able to indicate what job I am looking for.	1	2	3	4	5
4 Entrepreneurs should be able to add job offers.	1	2	3	4	5
5 Other users should be able to evaluate my skills.	1	2	3	4	5
6 Other users should be able to add a reference about me.	1	2	3	4	5
7 The app should recommend me as other users' contacts.	1	2	3	4	5
8 As a user, I should be able to recommend my profile to other selected users.	1	2	3	4	5

Please assess the importance of the following app features. How important would each of them be for you?

	very unimportant	rather unimportant	I do not know	rather important	very important
9 registration to the app through Google accounts, Apple accounts, Facebook, etc.	1	2	3	4	5
10 possibility to download the app from the Appstore and Googleplay	1	2	3	4	5
11 visual personalisation of your profile, i.e changing colours	1	2	3	4	5
12 personalization of the privacy of profile content (who and what can see my entries)	1	2	3	4	5
13 adding a profile picture	1	2	3	4	5
14 selecting which information I want to share with other users	1	2	3	4	5
15 selecting which users I want to share my information with	1	2	3	4	5
16 keeping some skills private	1	2	3	4	5
17 availability in the native language	1	2	3	4	5
18 availability of general repository from which I can choose skills for myself	1	2	3	4	5
19 adding skills to profile by myself	1	2	3	4	5
20 evaluating the level of my skills development	1	2	3	4	5



21	adding an experience to my skills	1	2	3	4	5
22	adding a reference to my skills	1	2	3	4	5
23	adding materials confirming my skills	1	2	3	4	5
24	showing my skills to others	1	2	3	4	5
25	possibility to contact other users	1	2	3	4	5
26	social networking aspects as giving feedback, liking	1	2	3	4	5
27	having a contact to real career advisors and employers	1	2	3	4	5
28	adding posts visible to my community	1	2	3	4	5
29	possibility to recommend what skills other users have	1	2	3	4	5
30	getting recommendation what skills I should develop to get my dream job / position	1	2	3	4	5
31	exporting data from my account to my CV	1	2	3	4	5
32	containing materials teaching how to create CV	1	2	3	4	5
33	template for CV creation	1	2	3	4	5
34	exercises to practice job interview based on my skills and my dream job	1	2	3	4	5
35	availability of learning materials about skills to improve them	1	2	3	4	5
36	videos to help me learn particular skills	1	2	3	4	5
37	quizzes to help me learn particular skills.	1	2	3	4	5
38	mini-games to help me learn particular skills	1	2	3	4	5
39	hints how to practice my skills in real-world like situations	1	2	3	4	5
40	defining dream job and practicing toward it	1	2	3	4	5
41	indicating what tasks and skills are required for a given position	1	2	3	4	5
42	indicating between my current skills and my goal, such as dream job	1	2	3	4	5
43	access to job offers	1	2	3	4	5
44	showing me job offers that suit my interests	1	2	3	4	5
45	reminders and notifications i.e. about learning materials, unfinished tasks and deadlines	1	2	3	4	5
46	rewards for regular self-reporting and sharing skills in public repository	1	2	3	4	5
47	rewards for using educational materials	1	2	3	4	5
48	gather points for activity within the app	1	2	3	4	5
49	seeing statistics from my achievements so far	1	2	3	4	5
50	asking about my current mood to adjust feedback	1	2	3	4	5
51	the coach (support within the app) advising on the next individual steps in the application.	1	2	3	4	5