

DIGI-GRENT Project

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**Output name: Digital and Responsible
Entrepreneurship (DREP) Curriculum**

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1 Introduction

The DIGI-GRENT project aims to develop an innovative, transnational framework that will improve the knowledge and skills of academic institutions to produce more market/start-up oriented digital and responsible entrepreneurship (DREP) curricula.

This document provides an explanation of the DREP Curriculum developed in the framework of DigiGrent Project. Following a Quintuple Helix co-creation process, this curriculum covers the aims, training needs, learning outcomes and methodologies suggested to implement Digital and Responsible Entrepreneurship training. This way, focusing on the higher education sector, it enables academics and lecturers to get acquainted and infuse their curricula with DREP from a multi-stakeholder perspective (covering both startups and existing industry) filling thus the major gaps within this sector and EU overall.

The project consortium comprises academics, investors, industry and employment associations, start-up associations, and societal growth partners from different sectors who have co-created the DREP curriculum and have piloted it through an open innovation and co-creation virtual learning environment (VLE).

Namely, the project consortium is led by the University of Almería, while other academic partners participating in the project are: the South Eastern European Research Centre, University of Lodz and Formazione Manageriale e Ricerca sul Management (ISTUD). Academic partners are supported by business environment organisations, such as Federacion Empresarial Metalurgica Valenciana (FEMEVAL), Foundation for Promotion of Entrepreneurship in Lodz, Greek Exporters' Association (SEVE) and associated partners comprising The Triple Helix Association, Hellenic Business Angels Network, Young Entrepreneurs of Thessaloniki and Andalucia Emprende.

This extensive coverage of different stakeholders within the consortium has allowed working under the quintuple helix-academia cooperation for innovation and best practices concerning DREP, leading to more prepared graduates ready for the start-up market. DIGI-GRENT also follows up the recent plans of the European Union to promote improved, efficient and clean



operations by 2050 and is also relevant to the EU2020 targets for R&D, climate change, energy efficiency, entrepreneurship and social cohesion.

2 Training needs analysis

2.1 Research methodology

An essential part of the DIGI-GRENT project is research aimed at the identification of competencies required by responsible digital entrepreneurs, especially that academic literature providing empirical considerations within this area is limited (Kraus et al., 2019).

The developed questionnaire has been based on the performed a systematic literature review of academic and non-academic literature review. Academic literature review (ALR) focused on:

- Databases: Scopus, Web of Science, EBSCO and Google Scholar.
- Search fields: title, abstract, keywords.
- Timeframe: 2008-2018.
- Type of publications: published journal articles in English with the availability of the full text (excluding proceedings, books, working papers and other types of publications).

As for the keywords, we referred to the following search phrases:

- (missing OR key OR critical) OR/AND (training needs OR training needs analysis) OR/AND (skills OR competencies OR abilities) AND (digital entrepreneurs OR digital entrepreneurship) OR/AND (sustainable entrepreneurs OR sustainable entrepreneurship OR responsible entrepreneurs OR responsible entrepreneurship).

During the search, we centred on the 50 top cited papers identified in each database. However, this assumption was sometimes substituted by relevancy matching in order to obtain results better aligned to the investigated thematic area.

The ALR was followed by the non-academic literature review (NALR), that had the same focus in terms of the timeframe and searched keywords. Nevertheless, the scope concentrated on:

- Database: Google.

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- Search fields: MBAs, professional courses/programs.
- Other requirements: identified courses should be offered by recognised universities/business schools/providers; w program with learning outcomes/training goals or skills should be accessible.

The ALR resulted in the identification of 31 papers that we included for further analysis, whereas as a result of NALR we identified 13 organisations providing education (both undergraduate/postgraduate and vocational) on digital and/or sustainable/responsible entrepreneurship and analysed the programmes in order to determine the key competencies and skills (Cruz-Ros et al., 2017; Du & Li, 2018; Kraus et al., 2019; Lans et al., 2014; Man et al., 2002; Marques & Albuquerque, 2012; Ngoasong, 2018; Pappas et al., 2018; Ploum et al., 2017; Scuotto & Morellato, 2013; Wronka-Pośpiech, 2016). As a result of both parts of the literature study, we have developed a questionnaire, including the selected, following parts:

- The extent to which digital activities are included in business models of surveyed companies as “developers/providers” and “users”.
- General entrepreneurial and managerial skills and competencies, comprising: Opportunity recognition; Networking; Flexibility and adaptability; Communication with stakeholders: customer/supplier and others; Interpersonal relations/teamwork; Organising business: day-to-day operation management, business process management, etc.; Business architecture: strategy, long-range management, etc.; Financial management; Access to early-stage financing.
- Digital entrepreneurship skills and competencies, comprising: ICT management; Digital security; Social media marketing / digital marketing; E-commerce/m-commerce; Digital communication and social networks; Digital innovation; Online business: online business model generation, online opportunity recognition, etc.
- Sustainable /responsible/green entrepreneurship skills and competencies , comprising: Business ethics; Corporate social responsibility; Sustainable strategic management; Sustainable operations management; Sustainable marketing; Sustainable research and development; Sustainable business model development; Sustainable challenges



anticipation: foresighted thinking; Social/environmental/economical (CSR) problems identification and management; Understanding sustainable-relevant systems and subsystems; Understanding sustainable-relevant standards.

The computer-assisted web interview (CAWI) was executed in 4 European countries, in which the DIGI-GRENT project has been implemented (Greece, Italy, Poland, and Spain). The questionnaire was translated into the local languages. From March to May 2019, we gathered 205 responses included in the research sample (ca. 50 per country).

In order to evaluate the importance of skills, we used a 7-point Likert scale, where 1 indicated that the surveyed skill is important/relevant at all, and 7 indicated that the surveyed skill is very important/relevant. A copy of the questionnaire can be found in this [link](#).

2.2 Research results

The majority of the enterprises in the research sample could be characterised as small employing less than 50 people (64%) and operating on the market for more than 5 years (81%) (see figures 1 and 2).

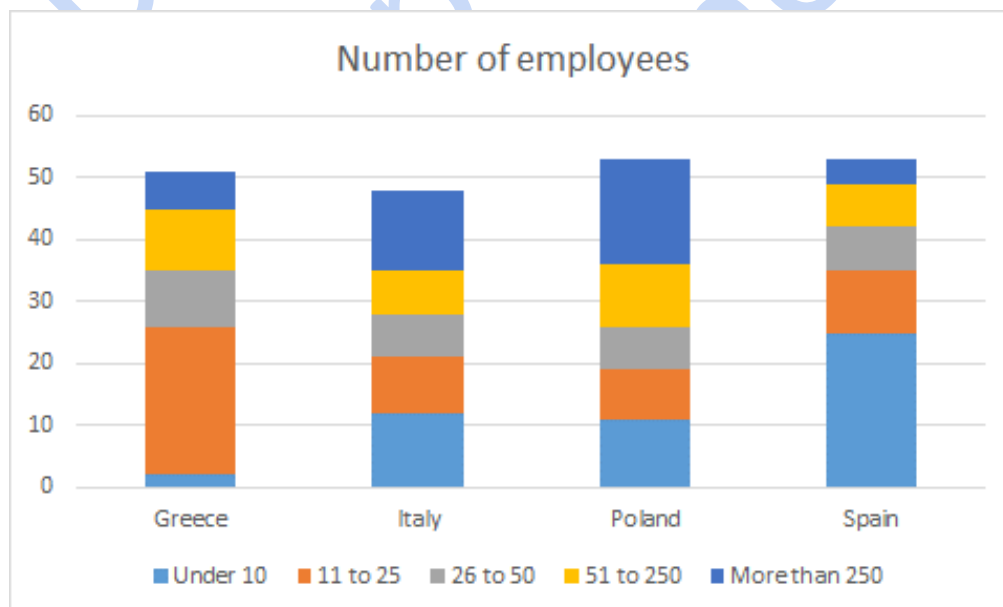


Figure 1 Number of employees per country.

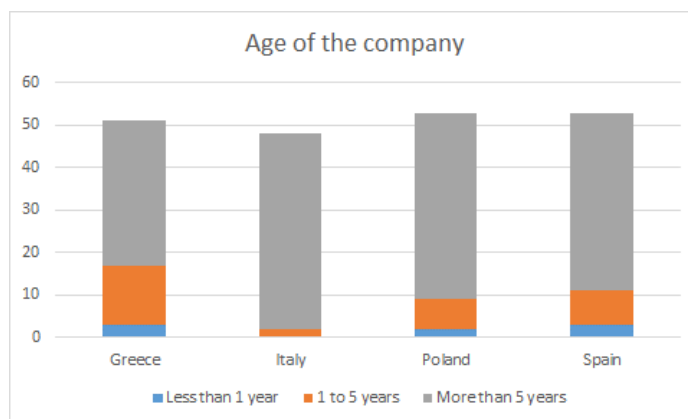


Figure 2 Age of surveyed companies per country.

In our research, we have both focused on digital products and/or services providers and users. The shares of providers varied between 30% in Spain and almost 60% in Greece, whereas the shares of users were higher, ranging from 73% in Italy to 98% in Spain (see figure 3).

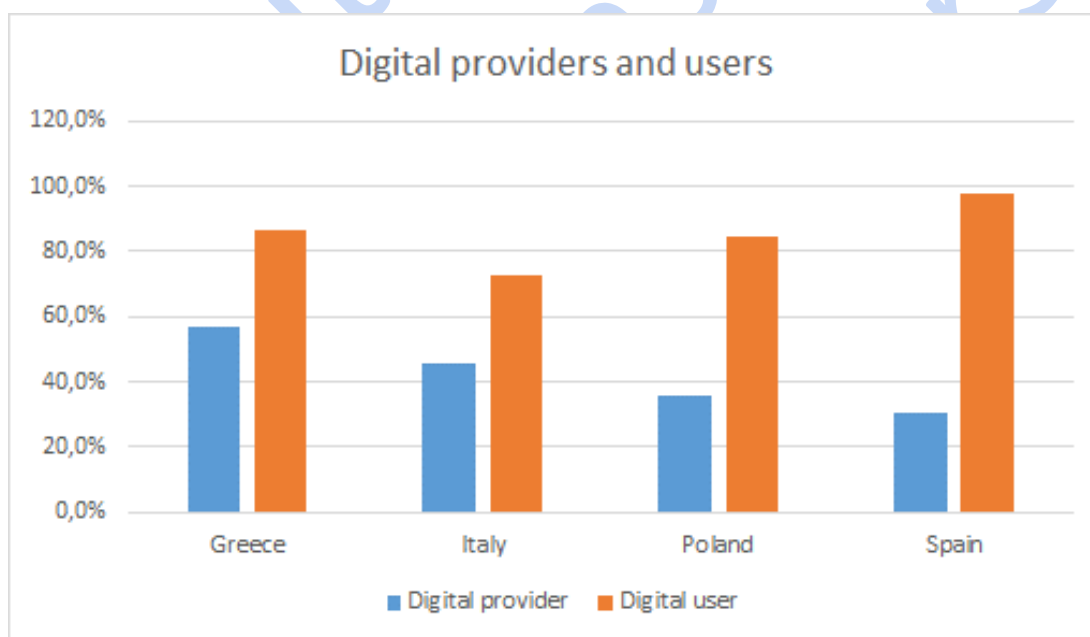


Figure 3 Shares of digital providers and users per country.

The importance of managerial skills on the used scale was evaluated from 4.94 (Access to early-stage financing) to 5.82 (Flexibility and adaptability; Interpersonal relations/teamwork). Other

essential skills highlighted by the respondents were: Networking (5.74) and Communication with stakeholders: customer/supplier and others (5.71). As for the countries, the average importance varied from 5.56 in Spain (SD=0.20), 5.50 in Greece (SD=0.14), 5.69 in Poland (SD=0.54) to 5.72 in Italy (SD=0.60).

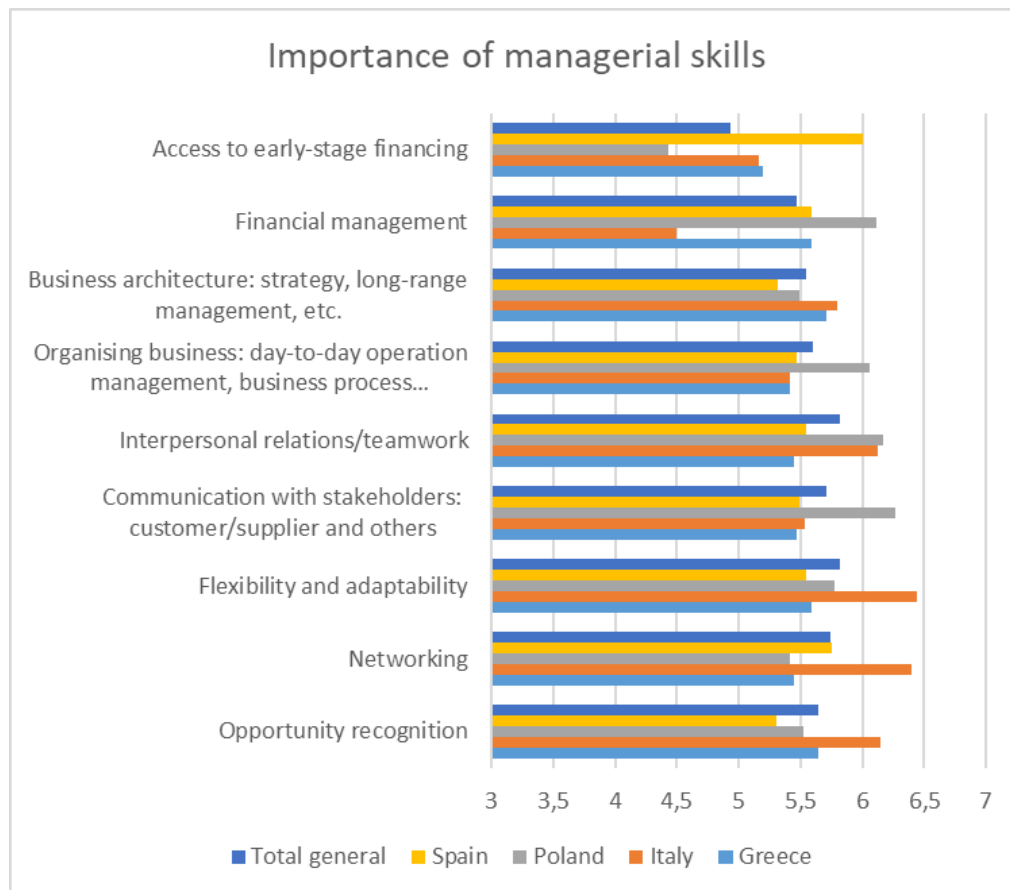


Figure 4 Importance of managerial skills per country and in general.

The next part of the survey focused on the importance of digital skills as the most important among them were considered Digital security (5.67), followed by ICT management (5.35), Social media marketing / digital marketing (5.19) and Digital innovation (5.17). The country perspective could be characterised as follows: 4.63 in Spain (SD=0.46), 5.13 in Greece (SD=0.21), 5.23 in Poland (SD=0.60) and 5.44 in Italy (SD=0.39).

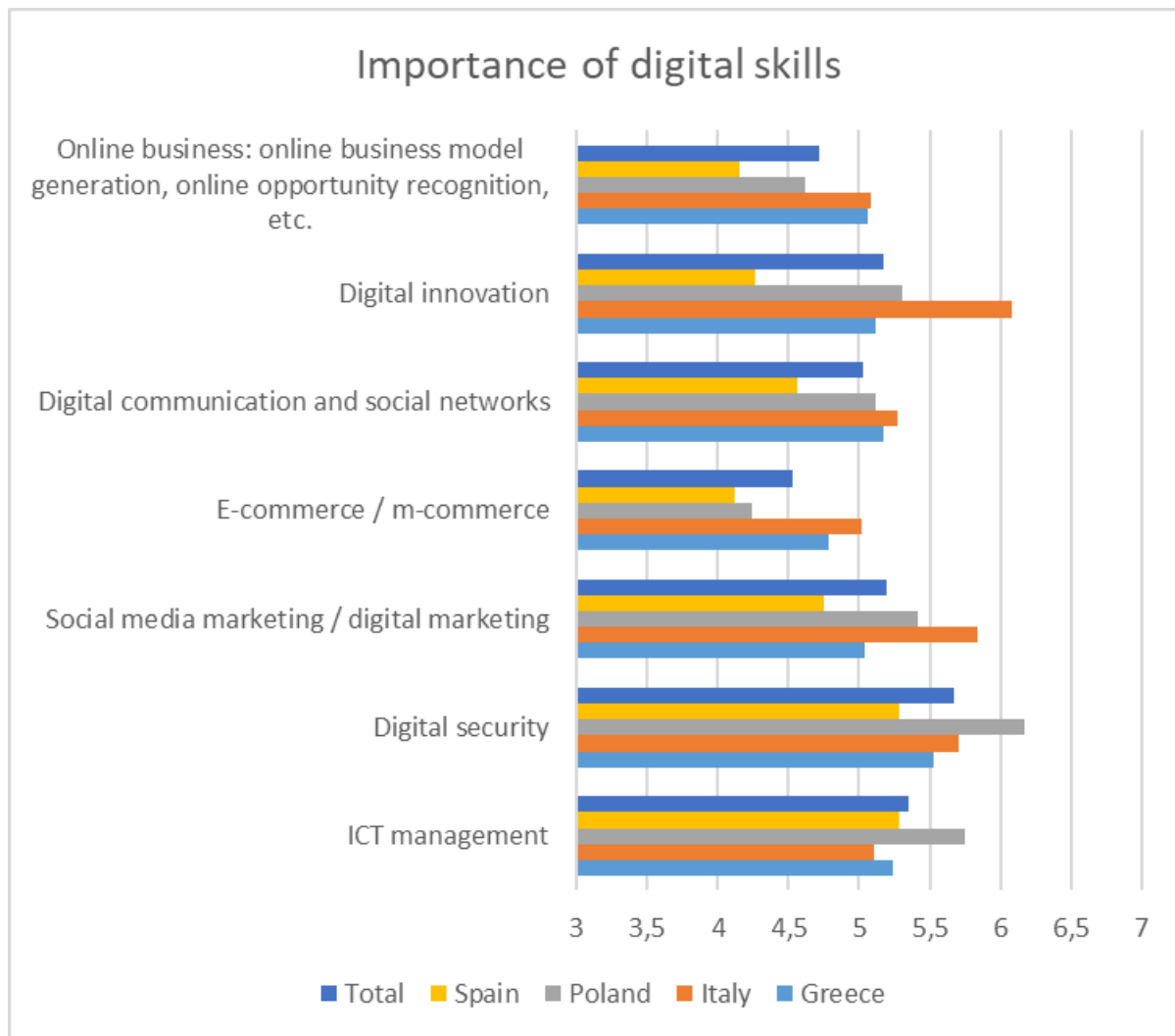


Figure 5 Importance of digital skills per country and in general.

Finally, among sustainable/green skills, the highlighted ones were: Business ethics (5.64) and Corporate social responsibility (5.03). The importance of all the other skills in this area was evaluated below 5. As for the countries, the average importance varied from 3.34 in Poland (SD=0.97), 4.12 in Spain (SD=0.51), 4.96 in Italy (SD=0.41) to 5.02 in Greece (SD=0.34).

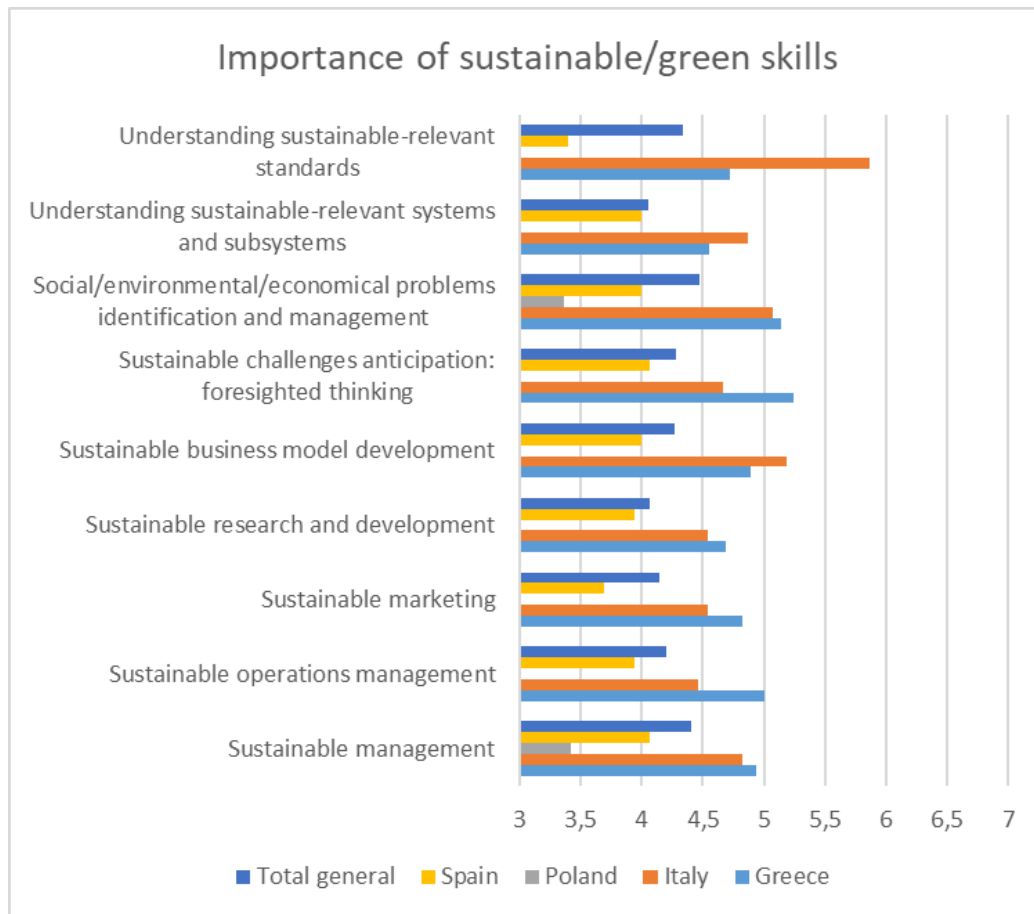


Figure 6 Importance of sustainable/green skills per country and in general.

2.3 Co-creation process

The results of this training needs analysis, along with the learning outcomes that will be further explained in the following point were presented and discussed at the Triple-Helix Association Annual Meeting held in Thessaloniki in 2019. This allowed us to validate and refine the ranking of the needs identified, the competences designed to be incorporated in our curriculum and the match with the content units.

In addition, DigiGrent was designed to test, pilot, and refine the contents through three training and pitching events (TCCPs) in which staff from all the institutions members of the consortium participated (employers, academics and entrepreneurs). The foundations of the co-creation



process are further explained on IO2 and they led us to the Curriculum presented in the following section.

3 Curriculum Development

3.1 Learning outcomes

Previous to the proposal, we performed an initial small scale pilot research (during January 2018) through each partners' consultations with their quintuple helix stakeholder groups (5 stakeholders per country) as well as review of national documents and DREP related academic and non-academic programmes. It helped us to identify and organize the main areas for the DREP curriculum development. They were organized around three big content blocks: Entrepreneurial training, Digital training and Responsible training, represented with the colors yellow, blue and green in the following tables.

Based on the training needs identified in the previous step, we performed a correlation between the competences required and the learning outcomes initially identified in the preliminary analysis incorporated in our proposal. This way, the competency areas were matched with the skills and competencies identified and prioritized in our previous analysis. This has allowed us to connect the training needs with the content modules that populate our curriculum.

This process of matching was discussed among academics, industrial partners and entrepreneurs (all of them members of our consortium) in our first Transnational Project Meeting held in Milan in April 2019.

Competency areas from the applications	Skills and competencies identified through ALR and NALR	Opportunity recognition skills	Network or ki ng ski lls	Inter pers onal/ team work skills	Flexi bility and adap tability skills	ICT manage ment skills	Social media marketi ng / digital marketi ng skills	Digital Security	Busin ess ethic s	Corpora te social responsi bility (CSR)	Susta inabl e/res ponsi ble/g reen strat egic man age ment
Eco-friendly digital business models for startups		x		x	x				x	x	x
Startups, social awareness, and the triple bottom line in the digital era		x		x	x		x		x	x	x
Developing partnerships with responsible companies in the e-market			x	x	x		x		x	x	
Digital security and cybercrime for digital entrepreneurs						x	x	x			
Digital policies						x	x	x			
Next-generation digital trends for digital entrepreneurs		x			x	x					x
Managing and understanding the quintuple helix towards fostering digital & responsible startups				x	x				x	x	
Bridging Investors, Business Angels and Digital & Responsible startups			x	x	x						x
Pitching strategies for digital & responsible entrepreneurs			x	x	x		x		x		x



3.2 Methodology

DigiGrent proposes a blended process/method approach to the entrepreneurial activity. Thus it requires a balance of different methods to help delegates to acquire and develop the proposed knowledge, skills and attitudes. However, since participants are conceived as active players in their own learning process, a special attention will be paid to the mechanisms that push delegates to learn from their own experience. Existing empirical studies have established a connection between practice-based learning and the academic performance of the entrepreneur (Blair et al., 2004; Dressler & Keeling, 2004). These teaching methods facilitate entrepreneur' sense of awareness to learn, and heightened interest in learning (Hinnings & Elliot, 2011).

In this section we propose a set of methods contingent to the characteristics of the learning outcomes. Further than just providing a prescription on the methods to employ for each learning outcome, this networked curriculum design will provide a pool of resources so that could be useful for the learning process. The final composition of the methodologies employed will be a decision of each lecturer and will be guided by the principles previously exposed and the characteristics of the thematic focus of each course.

The methodologies proposed combine both individual and group work. Thus providing a toolbox through which facilitate learning environments in DIGIGRENT Courses.

3.2.1 Teaching/Learning methods

Lectures and Keynotes

This is the traditional method for delivering specific knowledge-based contents. It facilitates reaching a wide public introducing concepts to be further used or applied. However, given the approach of DIGIGRENT, these lectures should be as much interactive as possible. Interactive lessons intellectually engage and involve delegates as active players in a lecture-based class. This is achieved through breaks in the lecture to let students participate in an activity that makes them work directly with the material.

Resources:

- Business Model Canvas.

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- Lean Planning
<http://www.slideshare.net/Strategyzer/testing-process-45726017>
- Value Proposition Design
http://www.slideshare.net/ypigneur/value-proposition-design-47698911?utm_source=slideshow02&utm_medium=ssemail&utm_campaign=share_slideshow_loggedout
- How to plan and deliver a pitch
E.g. <http://guykawasaki.com/how-to-create-an-enchanted-pitch-officeandguyk/>
- Storytelling
E.g.: Evans, M. (2015). Storytelling for Startups: How Fast-Growing Companies Can Embrace the Power of Story-Driven Marketing. Self-published.
<http://www.storytellingforstartups.ca/>

Case Studies

Many concepts and skills of the proposed are usually better learned through inductive than deductive reasoning. It means that learning can be better achieved from examples than from logical development starting with basic principles. This is especially useful in the case of Business, digital and responsible related issues where relationships are far away of being simple and unidirectional. The use of case studies can be an effective classroom technique.

Resources:

- Digital and responsible case studies:
Will be different depending on the topic and therefore will vary from course to course.
- Business case studies:
- Lean planning:
 - Eisenmann, Thomas R., Michael Pao, & Lauren Barley. "Dropbox: 'It Just Works'." Harvard Business School Case 811-065, January 2011. (Revised October 2014.)
- Additional cases can be found in:
<http://theleanstartup.com/casestudies>
http://founderswiki.com/wiki/Lean_startup_case_studies



Experience based activities

DigiGrent approach aligns with the idea that “learning is the process whereby knowledge is created through the transformation of experience” (Kolb, 1984, p.41). There are broad arrays of activities that can be proposed to help delegates to learn from their own experiences. These activities can be used to facilitate the development of knowledge, skills and attitudes. Experiential learning activities go beyond the simple proposal of actions. Real learning only occurs when after the experience comes a process of reflection, further conceptualization of reality and solutions and active experimentation for testing those hypotheses (Kolb, 2014).

Eventually, experience based activities can be developed indoor, especially with the aim of developing some managerial skills such as team work, communication, time management or risk assessment.

Resources:

- Design Thinking: The wallet project
(https://dschool.stanford.edu/groups/designresources/wiki/4dbb2/The_Wallet_Project.html)
- Design Thinking: The gift-giving project
https://dschool.stanford.edu/groups/designresources/wiki/ed894/The_GiftGiving_Project.html
- Collaboration, innovation and creativity: The marshmallow challenge
<http://marshmallowchallenge.com/Welcome.html>
- Icebreakers, warmers, energizers, unwinders:
 - Kirby, A. (Ed.). (1992). A Compendium of Icebreakers, Energizers, and Introductions. Human Resource Development.
- Teambuilding activities:
 - Chen, J. (2012). 50 Digital Team-building Games: Fast, Fun Meeting Openers, Group Activities and Adventures Using Social Media, Smart Phones, GPS, Tablets, and More. John Wiley & Sons.
 - Parker, G. M., & Kropp, R. P. (1992). 50 Activities for Team Building (Vol. 1). Human Resource Development.



Outdoor training

Outdoor Training refers to a group of experience-based learning activities and methodologies developed in open air, away from the working area and in contact with the natural environment. Those activities are proposed in a fun environment that facilitates motivation and engagement. Important lessons can be extracted from the challenges that might prove of special relevance for the future development of group work. Those shared ideas among the group members are usually made explicit by writing down a “magna carta” which incorporates the foundations of how the group will behave in the future and a set of principles for effective performance.

Outdoor activities allow for the introduction of more complex situations and encompass broader environmental factors, including the effects of participants’ decisions and actions (Meyer, 2003).

Resources:

- Activities: Consalvo, C. M. (1996). *Changing Pace: Outdoor Games for Experiential Learning*. HRD Press, Inc., 22 Amherst Road, Amherst, MA 01002.
- Adventure activities: Wagstaff, M., & Attarian, A. (Eds.). (2009). *Technical Skills for Adventure Programming: A Curriculum Guide*. Human Kinetics.
- Concept and methodology:
 - Kass, D., & Grandzol, C. (2012). Evaluating the value-added impact of outdoor management training for leadership development in an MBA program. *Journal of Experiential Education*, 35(3), 429-446.
 - Bell, B. J., Gass, M. A., Nafziger, C. S., & Starbuck, J. D. (2014). The State of Knowledge of Outdoor Orientation Programs Current Practices, Research, and Theory. *Journal of Experiential Education*, 37(1), 31-45.

Off-site visits

DigiGrent Blueprint suggests the use of off site visits as a key method for connecting with the industry specific characteristics. This way through the visit to firms, suppliers or potential clients, participants will be able to experience industry real needs.

In addition, off site visits will help participants to engage in common activities outside the formal setting of the course, thus fostering social connections, motivation and networking.



3.2.2 Assessment methods

Assessment processes are inherent to the learning activity. The lean principles in which DIGIGRENT courses bare their roots are founded on the idea of establishing an accurate system of metrics that facilitates learning. Thus DigiGrent courses will pay a special attention to the evaluation activities.

Evaluation will happen at different stages and thus we propose a set of mechanisms contingent to the evaluator and the level assessed.

	Internal	External
Individual	<ul style="list-style-type: none">• Self- Assessment	<ul style="list-style-type: none">• Peer evaluation• Observation
Group	<ul style="list-style-type: none">• E-Portfolio	<ul style="list-style-type: none">• Pitches/ Contests• Training Challenge

Internal evaluation will be materialized at the individual level through a process of self-assessment and reports. Participants will be encouraged to reflex on what they have learnt with every activity and how this is affecting their level of knowledge, skills and attitudes.

Individuals will be also evaluated by their peers and by the course facilitators who will perform a regular monitoring of the level of participation and engagement in the activities of all the delegates. Rubrics will be provided so that peers could easily identify behaviours and assess their group mates.

We propose the use of e-portfolios for internal evaluation of groups. E-portfolios consist in a compilation of the conclusions extracted by each group after going through each component or activity. Groups will be encouraged to communicate their thoughts by posting them on the VLE on a regular basis during the course. This will allow groups to interiorize the competences acquired, while at the same time facilitate communication between groups and even networking between courses.



With the aim of motivating participants to share their opinions, we propose the gamification of the process by making a contest about the best portfolio of the course (rubrics will be provided).

Finally with the aim of external evaluation of groups' performance we suggest the use of a combination of challenge-based methods, such as the delivery of pitches related to specific components of the curriculum.

In addition, rubrics will be provided to facilitate the evaluation of the different components, activities and facilitators by the courses' participants.

3.3 Timing and organization

DigiGrent Project was designed to test and pilot these contents through 3 transnational co-creation pitching events (TCCP training events). This way we organized the contents in three blocks in which training from the digital, responsible and entrepreneurial sides were combined:

Competency area	TCCP
Eco-friendly digital business models for startups	1
Startups, social awareness, and the triple bottom line in the digital era	2
Developing partnerships with responsible companies in the e-market	3
Digital security and cybercrime for digital entrepreneurs	1
Digital policies	3
Next-generation digital trends for digital entrepreneurs	2
Managing and understanding the quintuple helix towards fostering digital & responsible startups	1
Bridging Investors, Business Angels and Digital & Responsible startups	3
Pitching strategies for digital & responsible entrepreneurs	2

Each one of the training components developed particularly incorporates the rationale principles described in this document, adapting them to the needs of the topic and the course. The initial



proposal has been adapted after the validation of the quintuple-helix stakeholders (the process of validation is explained on IO2) and here we present the documents that will guide the training for each one of the components:

Competency area	Guidelines
Eco-friendly digital business models for startups	Link
Startups, social awareness, and the triple bottom line in the digital era	Link
Developing partnerships with responsible companies in the e-market	Link
Digital security and cybercrime for digital entrepreneurs	Link
Digital policies	Link
Next-generation digital trends for digital entrepreneurs	Link
Managing and understanding the quintuple helix towards fostering digital & responsible startups	Link
Bridging Investors, Business Angels and Digital & Responsible startups	Link
Pitching strategies for digital & responsible entrepreneurs	Link

Although the duration of the training can be adapted using different combinations of the resources suggested, each one of the topics is generally intended to be developed throughout 10 hours of participant's work.

3.4 Adaptation to online teaching

At the beginning of 2020, the outbreak of Covid-19 led to a worldwide spread pandemic situation that changed the whole world, entailing several restrictions (mainly regarding mobility) that forced us to change and adapt our methodology towards a more virtualised environment and online teaching. These circumstances had a direct effect on the management and development of some of the project's activities, arising the need of adapting them to virtuality, postponing in time some activities and changing dates as well, due to the lockdown. Facing this scenario, partners found the necessity to adapt to the new situation so they started to look for other resources, develop new content, and create and dispose different platforms and utilities to reach stakeholders in a more appropriate way.



One of the project's activities that was highly affected by the pandemic was the teaching and learning activities, since traditional teaching (as it was used in the first TCCP) had to be adapted to this new virtual environment. One of the first and main decisions on this after the Covid-19 outbreak was to postpone the two remaining events, to be capable of adapting and organising the activities in a proper way with the needed recruitment process and pre-training associated, as well as, the correct adaptation of the materials and sessions. Thus, in accordance with the rising priorities set by the pandemic, training materials had to be adapted to be delivered online, exploiting an interactive approach that encompasses the recourse to ICT resources, namely videos and instant pooling tools for setting the expectations and ensuring the highest possible degree of participation. In this sense, Zoom and Teams web-conference platforms were used to allow a proper interaction among participants and the creation of working groups.

Online teaching has been traditionally linked to the difficulty of attracting and maintaining the attention of the different attendees, above all if we compare it the regular in-person sessions. This could be also due to the lack of direct social reinforcements that exist when attending physically the teaching lessons. However, several studies demonstrate that organizing an online learning/training session with shorter theoretical sessions and more spread in time would offset those preliminary problems observed before. In this sense, the virtual nature of the two remaining TCCPs allowed the organizers to re-configure the 'training week' as it was conceived for Thessaloniki. Then, the five days of work of the project curricula were not placed in an intensive week where participants had full-time dedication in an immersive format to the project activities, but they were spread in two weeks. This way, participants had more time to work in groups in their business ideas, co-creating with the team members and the different quintuple helix stakeholders and mentors that were at their disposal during the whole duration of the training. This virtuality and configuration of the training also made easier the attendance by participants, since they are active workers of the partner institutions, allowing them to balance their daily job commitments and the project's training activities.



After the completion of the three teaching and learning activities, using both traditional and online teaching, partners could confirm that virtual training has been similar to the traditional face-to-face teaching, in terms of impact and usefulness for participants and general attendees.

4 Institutional-level assessment

The process of institutionalisation of the DigiGrent curriculum, this is how it can be incorporated into the regular life of academic institutions, can be implemented following two different paths.

The first one conceives DigiGrent curriculum as a “standing alone” training that can be considered as a program itself. This way would require the translation of the teaching and learning activities into the ECTS framework. For its part, ECVET accreditation is not fully implanted in the countries where the members of the consortium are based, thus limiting the potential for transferability of the project in this regard. Additionally, ECVET implementation procedures are highly variable among countries, which made difficult the description of a global mechanism for implementation that we could use with the project materials.

The second one follows an indirect path. In this case, the contents created and curated at the DigiGrent project are used by other existing courses, infusing other programs with a digital and responsible entrepreneurship approach.

Both options are not mutually exclusive and can be implemented at the same time by academic institutions. In the following subsections, we exemplify how this can be done.

4.1 Adaptation of the courses into ECTS

The process of translation of the courses into ECTS (ang. European Credit Transfer System) greatly varies depending on the institutional context of each university and country. Since the decision ultimately relies at the faculty/university level, there is no common framework that lists all the



requirements. In order to address this European heterogeneity, we have explained the process on each academic institution participating at DigiGrent. This has allowed us to identify the critical points to be addressed in different institutional settings, helping us to provide DigiGrent curriculum with the crucial elements to be accepted in a wide variety of cultural and institutional settings.

ECTS certification at the University of Almería

The University of Almería opens the possibility for recognizing training courses as Specific programs (Enseñanzas propias). They can range from seminars or undergraduate programs to postgraduate or master programs or seminars. Given the characteristics of DigiGrent curriculum two options open in this sense. The first would consider all the trainings developed as a whole program. In this sense it could take the shape of a postgraduate course (Titulo Propio de Experto Universitario). DigiGrent Curriculum meets all the requirements to be certified as a 30 ECTS program under this framework.

Alternatively, each one of the courses developed in this curriculum could be offered independently as seminars or specialization courses of 3 ECTS each.

Each application should incorporate the following information

- a. General information and brief justification
- b. Teachers requirements
- c. Activities description and methodology
- d. Activities temporalization
- e. Economic and Finance aspects

All the applications need to be assessed by a committee at the University and if successfully considered, would be displayed at the university website as own training.

ECTS certification at SEERC*

**The actual certification will take place within SEERC's affiliated higher educational entity – CITY College, University of York Europe Campus.*

Process description

No.	Action	Responsibility	Document	Additional information
1	Preparation of submission documents for a new subject	Academic staff	<ul style="list-style-type: none"> E9 form: Proposal for the introduction of new course Statement on the lack of reproductions of the program content Syllabus Courseworks ECTS credits calculator used at the Faculty 	
2	Revision and approval of documents from step 1	Head of undergraduate or postgraduate studies and Head of Department	<ul style="list-style-type: none"> Filled proposal for the introduction of new course and other documents required 	Back and forth revisions will be required
3	Submission of documents from step 2 to The Vice Principal for Learning and Teaching	Head of department	<ul style="list-style-type: none"> Filled proposal for the introduction of new course and other documents required 	
4	Revision and approval of documents from step 3	Head of Department, Academic staff, Quality assurance team	<ul style="list-style-type: none"> Filled proposal for the introduction of new course and other documents required 	If the document is approved then it is transferred to Commission for Quality Assurance in Education
5	Revision and approval of documents from step 4 of the Commission for Quality Assurance in Education	Commission for Quality Assurance of Students Education	<ul style="list-style-type: none"> Filled proposal for the introduction of new course and other documents required 	

6	Transfer of the approved document to the approval units from the University of York (Associate Dean for Management School)	Associate Dean	<ul style="list-style-type: none"> Filled proposal for the introduction of new course and other documents required 	Back and forth changes might still be required
6	Placement of the subject in the study plan	Department of Quality of Students Education		

Description of required Documentation

1. Proposal for the introduction of new course
Language: English
Content (main elements):
 - Name of the subject
 - Number of hours
 - Form of classes: lecture / exercises
 - ECTS
 - Justification for the introduction of a new subject
1. Syllabus
Language: English
Content (main elements):
 - A brief (general) description of the subject
 - Prerequisites
 - Educational outcomes
 - Knowledge
 - Skills
 - Social competence
 - Course content
 - Assessment methods and criteria (algorithm for calculating the final grade)
 - Literature
 - Current student's own work
 - Teaching methods
 - Feedback methods
1. ECTS credits calculator
Language: English
Content:
 - Name of the subject
 - Number of hours
 - Form of classes: lecture / exercises



ECTS certification at Faculty of Management (University of Łódź)

Process description

No.	Action	Responsibility	Document	Additional information
1	Preparation of submission documents for a new subject	An employee who wants to establish a new subject	<ul style="list-style-type: none"> Proposal for the introduction of new course Statement on the lack of reproductions of the program content Subject/ course card ECTS credits calculator used at the Faculty 	
2	Revision and approval of documents from step 1	Head of field of study	<ul style="list-style-type: none"> Filled proposal for the introduction of new course and other documents required 	
3	Submission of documents from step 2 to Department of Quality of Students Education	An employee who wants to establish a new subject	<ul style="list-style-type: none"> Filled proposal for the introduction of new course and other documents required 	
4	Revision and approval of documents from step 3	Head of Department of Quality of Students Education	<ul style="list-style-type: none"> Filled proposal for the introduction of new course and other documents required 	If the document is approved then it is transferred to Commission for Quality Assurance in Education
5	Revision and approval of documents from step 4 of the Commission for Quality Assurance in Education	Commission for Quality Assurance of Students Education	<ul style="list-style-type: none"> Filled proposal for the introduction of new course and other documents required 	

6	Approval of the documents from step 5 by Dean's Office	Dean	<ul style="list-style-type: none"> Filled proposal for the introduction of new course and other documents required 	
6	Placement of the subject in the study plan	Department of Quality of Students Education		

Description of required Documentation

1. Proposal for the introduction of new course
Language: Polish
Content (main elements):
 - Name of the subject
 - Number of hours
 - Form of classes: lecture / exercises
 - ECTS
 - Justification for the introduction of a new subject
1. Subject/ course card
Language: Polish/ English
Content (main elements):
 - A brief (general) description of the subject
 - Prerequisites
 - Educational outcomes
 - Knowledge
 - Skills
 - Social competence
 - Course content
 - Assessment methods and criteria (algorithm for calculating the final grade)
 - Literature
 - Current student's own work
 - Teaching methods
1. ECTS credits calculator
Language: Polish
Content:
 - Name of the subject
 - Number of hours
 - Form of classes: lecture / exercises



4.2 Contents implementation in institution's courses

The second option for the institutionalization of DigiGrent curriculum has been the implementation of the different contents, tools and resources generated as training materials for already established courses. In this section we describe which courses have benefited from this cross-fertilization and we suggest lines for further development depending on the characteristics of the academic institutions members of DigiGrent Consortium. As an overall indicator, we estimate that the number of students from participating universities that have been piloted/taught using the DREP curriculum (totally or partially) reaches 587 people.

UAL

The university of Almería has implemented the modules in the subject Entrepreneurship (Creación de Empresas) which is offered as a compulsory course for the last year students of 4 different degrees at the School of Business and Economics (Management, Finance and Accounting, Marketing and Economics). This way, 323 students have benefited from the curricular content developed by DigiGrent.

At the School of Engineering, the DigiGrent contents have been implemented in three different programs. The degree on Environmental Sciences (Environmental audit course), degree on Chemical Engineering and degree on Informatics (Business management courses).

At the master level, the contents have been presented at the Master for Secondary level Teachers, where the DigiGrent Methodology was introduced to the students of the specialty of Economy, Business and Commerce.

In addition, DigiGrent contents have also been used in some workshops and seminars organized at the University of Almería to foster Entrepreneurship. They are called JUMP! Courses and are aimed to last year undergraduate students who need to decide their next steps in their professional career.

SEERC

At SEERC, we will introduce the courses (with full ECTS accreditation) into the following units of our local campus (CITY College - University of York Europe Campus):

- Undergraduate studies (Business) 3rd level: Innovation & Entrepreneurship module (10 UK Credits = 5 ECTS)
- Undergraduate studies (Business) 2n level: Cases in Digital Transformation (10 UK Credits - 5 ECTS)

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- Postgraduate studies (Business) MSc level: Innovation & Entrepreneurship module (15 UK Credits - 7.5 ECTS)
- Postgraduate studies (Computer Science) MBA level: Innovation & Entrepreneurship module (15 UK Credits - 7.5 ECTS)

UOL

At the University of Łódź, the DigiGrent contents have been introduced specially in our programmes taught in English:

1. Business Management (<http://zarzadzanie.uni.lodz.pl/tabid/1613/Default.aspx>); subjects:
 1. IT Tools for Business
 2. Professional Skills Development
 3. Issues in Business
 4. Business Environment
 5. Management Perspectives
 6. Organization Competencies and Capabilities
 7. Electives
2. Management and Finance (<http://zarzadzanie.uni.lodz.pl/tabid/2537/Default.aspx>)
 - a. IT Tools for Business
 - b. Change & Innovation Management
 - c. Electives

In addition, the VLE has been promoted among the lecturers leading the above courses and we have asked them to consider including its contents in the selected subjects.

The content could also be used in different bachelor (<http://zarzadzanie.uni.lodz.pl/tabid/1431/Default.aspx>) and master (<http://zarzadzanie.uni.lodz.pl/tabid/1433/Default.aspx>) programmes, once translated.

This Intellectual Output number 1 has been translated into all project partners' languages, i.e. Spanish, Polish, Greek and Italian. The translations can be found in this [Link](#).



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