Summary Pedagogic Research

Transnational Report

GREEN ENTREPRENEURSHIP TRAINING

Get-Up Partners

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Executive Summary

This report presents findings acquired in a research performed between 1st of November 2016 and 15th of December 2016 in seven European countries (Romania, Cyprus, Germany, Spain, Ireland, United Kingdom and Finland) in the framework of the GET-UP project (Green Entrepreneurship Training - Underpinning Prosperity, ref. no. 2016-1-DE02-KA202-003277), financed by the Erasmus+ Programme of the European Commission.

GET-UP project focuses on the design and development of a bespoke green entrepreneurship curriculum capable of supporting nascent green entrepreneurs and micro-business owners to realise their business ambitions in the Green Economy. The purpose of our research was to achieve a need analysis that will support the project team in designing the green entrepreneurship curriculum and training programme for VET professionals and green entrepreneurs. The research was combined: a desk-based research acquired through literature review and a field-based research acquired through questionnaire.

Part A of this report presents the findings from the Literature Review and focuses on the: key skill areas and levels that need to be addressed in the GET-UP proposed green entrepreneurship curriculum; existing resources that could be used or re-designed for to avoid duplication; most appropriate media formats for the learning content; technology platforms; type of assessment framework; pedagogic supports to facilitate the induction of VET tutors into the new proposed blended learning environment. Before the end, the importance of Green entrepreneurship in the next 5 and in the next 10 years is estimated and explained.

In the Part B findings from the field research are shown. The research was achieved through a questionnaire applied to 92 entrepreneurs & green entrepreneurs, VET trainers, tutors/mentors, administrators, marketing managers, learning & skills professionals, and business representative bodies. The field research followed the same logic and objectives as the desk research, but from the perspective of the above-mentioned target groups.

Part C presents findings from the specific research performed by Future In Perspective Ltd. (FIPL) partner, regarding the best practice e-learning environments and best practice mini-learning format resources to be used in designing the proposed curriculum.

The next part provides a list of Learning Outcomes identified from both desk and field research, to be envisaged by the GET-UP curriculum.

The last part of the report - Conclusions and recommendations - contains some overall statements on the current situation in participating countries regarding green economy and entrepreneurship and provides some recommendations in the context.

Introduction

There is little doubt that the development of the green economy can make a significant contribution to restoring Europe's economy to growth by harnessing new business and employment opportunities that green businesses offer and many countries are looking to green growth as the way out of the current economic crisis. The global market for environmental goods and services is vast and it continues to grow quickly. UN research indicates that green investment programmes create more jobs per Euro or Dollar spent than many other stimulus programmes (SEF Alliance, 2009).

Entrepreneurs are agents of change and renewal in the economy and, as such, are important actors in the transition towards a green economy and while the important role of education in promoting more entrepreneurial attitudes and behaviour is now widely recognised there is an acknowledged shortage of entrepreneurship training courses and materials in general while specific curricula to support the growth of 'green entrepreneurship' are completely absent from the course manifestos of education providers almost in all Member States, or, as in the case of United Kingdom, they are not completely absent but limited (provision is limited but not absent). Developing and promoting new curriculum resources to support the growth of the green economy is now essential if EU 2020 priorities for smart, sustainable and inclusive growth are to be achieved.

A green entrepreneurship curriculum is not just an entrepreneurship curriculum with one or two modules added. Green entrepreneurship revolves around a set of core principles that set it apart from everyday entrepreneurship. Green entrepreneurs propose business models that are not only economically profitable but also create a positive environmental and social impact. Green entrepreneurs are aware of the need to change the way society has understood development and prosperity during the last century. They aim at integrating the environmental, economic and social axis into the core business of the company and strive to provide eco-innovative solutions to the way goods and services are produced, consumed and offered. Green entrepreneurs provide the breeding ground for starting and sustaining a green economy by providing green products and services; by introducing greener production techniques; by boosting demand for green products and services and by creating green jobs.

Our GET-UP project focuses on the design and development of a bespoke green entrepreneurship curriculum capable of supporting nascent green entrepreneurs and micro-business owners to realise their business ambitions in the Green Economy. Below there are findings from a research that we performed to identify data and information necessary to design such a green entrepreneurship curriculum.

Note:

Despite the common template for the format of the national reports, provided in the Research Guidelines, one can identify a relative lack of homogeneity in presentation of the national findings (especially in the case of the desk-based research) which made difficult the transnational analysis and comparison necessary for the elaboration of this report. However, the data and information display a relevant overview of the state-of-the-art in partner countries and a consistent synthesis upon the main investigated aspects. For more detailed information, those interested are invited to read also the national reports, available at http://eduproject.eu/get-up/.

Part A

Findings of the literature review in partner countries

Key skill areas that need to be addressed in the GET-UP proposed green entrepreneurship curriculum

Most of the key skill areas identified within the national reports are based on European policies and strategies, fact which indicates a common vision throughout the project consortium from the point of view of what the proposed GET-UP green entrepreneurship curriculum needs to address.

All green entrepreneurs must definitely be oriented to ecological practices and get both green skills (i.e. how to elaborate a green business plan, how to implement an idea, how to transform the project in reality) and general management skills (i.e. rising competitiveness, reducing costs, attracting investments). *(Romania)*

The greener aspect of the training needs to ensure we deliver good quality education such as with emphasis in: entrepreneurial ethics, the stakeholder approach, the triple bottom-line approach, triple bottom-line accounting, social return on investment, how are people becoming more aware of green / ethical / social enterprises. (Cyprus)

Eight key competencies could be addressed to create sustainability, namely competency in (1) foresighted thinking; (2) interdisciplinary work; (3) cosmopolitan perception, transcultural understanding and co-operation; (4) planning and implementation; (5) self-motivation and in motivation others; (6) distanced reflection on individual and cultural models; as well as (7) participatory skills and (8) capacity for empathy, compassion and solidarity. *(Germany)*

Besides the key skill areas which are pertinent to developing core entrepreneurial competences learners, modules which are more focused on the green sector are also needed within the GET-UP curriculum (e.g. Introduction to green entrepreneurship and characteristics of green entrepreneurs; Key principles and practices of 'going green'; Benefits of green entrepreneurship; Ideas generation for green entrepreneurs – finding the right idea for a green business; Business development and growth for green enterprises – what is the business culture and how can businesses expand; Marketing for green enterprises – green marketing products and services; Overview of green business sectors). *(Ireland)*

To implement their ideas, plans and projects nascent green entrepreneurs and micro-business owners should acquire or improve the knowledge and skills on environmental issues, national and European legislation, green growth and green economy, green technology and innovation, market of green products and services, the habits of consumers, the change of consumption and production patterns. *(Spain)*

There is a relatively limited evidence base on the learning and skills development needs of green entrepreneurs and/or green businesses. However, the available literature highlights three primary groupings of learning and skills development needs related to: the individual and their enterprising skills; the development of the business; understanding of the green economy. *(United Kingdom)*

"There is still a lot to be done, especially concerning small enterprises situated in rural areas and engaged in sustainable businesses. These kinds of enterprises are missing the knowledge and know-how required for implementing sustainable green products and their businesses": marketing; green thinking; related laws and regulations; networking; designing green products and services; internationalisation. (Finland)

Key skill levels that are appropriate local target groups

Although the key skill levels of the target groups in partner countries vary quite a lot, a common trend on the level that should be targeted was identified and this refers to EQF level 4 or higher:

- In **Romania**, there is a fact that most entrepreneurs have low levels of knowledge (basic) regarding the green entrepreneurship (only few are high-skilled in this domain).
- Regarding the **Cyprus** market, the green entrepreneurship projects focus seems to have a need for basic business management skills, soft skills and green related skills.
- With regard to the **German** situation a focus on novice level would be fitting for most potential participants and should be addressed.
- In **Spain**, most of the people in the target audience are informed and have basic or advances competencies about green entrepreneurship, but there are also people that do not know much about it.
- In **Ireland**, given the profile of the target group, a skill level of intermediate EQF level 4 as a minimum, would be recommended.
- In **Finland**, the curriculum should also target EQF level 4 or higher.
- For the **United Kingdom**, there is a lack of available evidence on key skills levels for green entrepreneurship training.

Existing resources that could be used or re-designed for use in the new green entrepreneurship curriculum to avoid duplication

An abundance of resources – projects, initiatives, programs - have been identified, of which a few are listed below (for examples and details please read the national reports):

- **Promoting the Entrepreneurship in the Sustainability Sector** that encouraged the initiation of new sustainable businesses, through the implementation of a VET programme. (Romania)
- **The start-up boot camp** of Climate KIC, Climate launchpad, which is supported by the European Union. (Cyprus)
- **Entrepreneurhub** (https://eshipnotes.wordpress.com/topics/class-xi/entrepreneurial-competencies) and **Entrepreneurial Skill Pass** (ESP). (Germany)
- **Green Entrepreneurship** - a 2015 initiative of the Erasmus+ Programme of the European Commission, aiming to support youth to create green start-ups. (Spain)
- A toolkit of resources offering training on all aspects of green enterprise development and how to make an existing business 'more green', for the development of green enterprises, as part of a **LEADER-funded initiative,** (www.101greenbusinessideas.ie) (Ireland)
- **Cool 10 Entrepreneurs** - a programme for social entrepreneurs with a vision to deliver economic growth by creating green businesses, or individuals who can shape the environmental business approach of an existing organisation. (United Kingdom)
- **EcoCuva Model** - a new tool for analysis and implementation of new product developments of SME's in the sustainable green marketing. (Finland)

Most appropriate media formats for learning content for target groups

All national researches unanimously recommend, as being appropriate for the project target groups, a combination of face-to-face and online learning methods, with a focus and higher emphasis on the latter. The online environments provide easy access and distribution of the learning resources. The media formats most needed and expected to produce successfully results are: audio-video files and video clips, online platforms, slide-shows (PPTs, Prezzi files), digital tools, social media (WhatsApp, Facebook), blogs, mobiles apps, webinars, MOOCs. The Moodle platform seems to widely accommodate all learning requirements of the target groups.

Type of assessment framework that would be most appropriate to facilitate the measurement of attainments

The assessment should be built around several crucial elements: overall aim, learning outcomes, delivery methods and assessment methods. It should be also accompanied by clear and timely feedback. The research at national level revealed a common vision upon the assessment framework of the GET-UP curriculum training, achievable through a complex combination of assessment:

- types: initial, continuing, final;
- methods: traditional (face-to-face) and online; written and oral (online). (in Cyprus traditional teaching is preferred, as specifically mentioned in the national report).
- tools: tests, case studies, surveys, graded quizzes, questionnaires, peer evaluation, focus groups, group work, project delivery, assessment using technology based simulators, exercises, development of a business plan, workbook.

Types of pedagogic supports that are needed to facilitate the induction of vocational education tutors into the new proposed blended learning environment

Two categories of support for tutors have been outlined: (a) instruction on how to efficiently use the e-learning environment (virtual platform) through which the GET-UP curriculum will be delivered in a blended approach; (b) training regarding national and European legal framework in the field of green entrepreneurship and economy (regulations, laws, requirements).

Ireland recommended that an induction programme for tutors should incorporate: an overview of the GET-UP project; an introduction to and breakdown of the content of the GET-UP green entrepreneurship curriculum; a concise but comprehensive introduction to e-learning and e-didactics; an introduction to the GET-UP platform and support and guidance for working through online environments; an overview of their new role as e-tutors and tutors working with green entrepreneurs.

Most appropriate technology platforms to be developed as e-learning environments

According to the research performed at national level in partner countries, the Moodle platform is the one recommended by most of the respondents as being the most appropriate VLE for delivering the GET-UP curriculum in a blended approach. However, there are countries in which the target groups are familiarised and work with other more complex environments: advanced Webex and WebCT/Blackboard and Blackboard collaborate tools (Cyprus, Germany); Sakai (Germany, Spain); ATutor, Whiteboard, Gradepoint, Desire2Learn, Learn, various Apps (Germany); Claroline, Dokeos, dotLRN, Ilias, Chamilo, MOOC, E-doceo (Spain); core technologies suggested are Open-Source - PHP, MySQL AB and Apache HTTP Server (Ireland); Canvas, OneFile and Turnitin (United Kingdom).

Finland recommends using for GET-UP a learning environment built on iCMS Content Management System based on Managers Framework which is a scalable, object-based programming framework. The core technologies behind the Framework are Open-Source and include PHP, MySQL Database, Apache Web service and RED5 Media Server.

Estimate and explain the importance of Green entrepreneurship in the next 5 and in the next 10 years in your country

In all partner countries Green entrepreneurship is currently of prior interest and the estimated trend is a highly growing one, with various extends for the time horizons of 5 and respectively 10 years. Definitely, there is need for further awareness raising and Green entrepreneurship training in the field.

Romania: the internal interest for the next five years is based on the Green entrepreneurs need and not only to improve the life quality and to decrease their costs. This interest is congruent with the European one (2020 EU strategy). The five-year prediction should be at least as encouraging as the first. People perhaps will valorise the skills they have developed and the green entrepreneurship and economy may be in a continuous process of growing, the green businesses will multiply.

Cyprus: the strategic resources that are being gradually employed over the next reporting period of the structural funds have highlighted green and energy conservation as a top priority. As a result, it is expected the sector growing at least twice as fast as the economy over a ten-year horizon, effectively increasing its share of GDP to at least near the current EU average.

Germany: today Green Economy represents about 14 % of the total market and it is predicted that the German market of Green Economy will nearly duplicate until 2025. The importance of Green Economy which also includes Green Entrepreneurship is already important and present, but most of the goals concerning the topic are not viable in a short time frame like five years, but need more time to achieve them.

Spain: in the following 5 years, green growth and consequently green entrepreneurship will be developed and expanded by further awareness about the climate change and the green economy and education for “being greener”. In the next 10 years, the situation will have improved further and more people including entrepreneurs will be aware, have better knowledge and competencies about green entrepreneurship or even be experts in this field.

Ireland: the Green Economy presents a major opportunity for employment creation in Ireland and for the development of indigenous enterprises and will contribute to securing sustainable economic growth in the medium term (i.e. the next 5-10 years). The Government have developed a series of policies and strategies which have supported, and will continue to support, growth in this sector in the coming years. With the EU’s plans for a low-carbon and resource efficient Europe by 2050,

Ireland will see more innovation and growth in green business sectors such as: waste management, carbon emissions, renewable energy and other similar areas.

United Kingdom: whilst there is growing agreement around the importance of providing a conducive environment for the green economy to grow and flourish, there is less agreement over the scale and scope of the green business sector and the labels used to describe green businesses. By reviewing the various existing typologies and features of Green Businesses one can identify that there is a focus on introducing a product or service that benefits the environment, an emphasis on energy consumption and an interest in value of the business for people and communities as well as profits. Finally, there tends to be a focus on the role of the business in bringing forward large-scale projects or impact.

Finland: according to EPI (2016) Finland is the world's greenest country. The expertise in environmental issues is reflected in the Finnish cleantech innovations and world class companies. Cleantech Finland is a growing network concentrated in clean technologies, of which we can expect significant international break-throughs in the next years. Ecological sustainability means using nature's resources in such a way, that their renewability is ensured, and the natural processes are maintained as economical, social and cultural process. Combining these three sectors is both the base, and a challenge for the economical entrepreneurship of the future.

Part B

Findings of the questionnaires applied in partner countries

This part presents the findings from questionnaires applied in partner countries (Romania, Cyprus, Germany, Spain, Ireland and United Kingdom) to a total of 92 persons. Finland did not provide data from the field research. The distribution of respondents per country is rendered in the table 1 below.

Table 1: Number of participants in GET-UP field research, in partner countries.

	RO	CY	DE	ES	IE	UK
No of participants	15	20	20	16	6	15
TOTAL	92					

The profile of the target groups encompasses: entrepreneurs & green entrepreneurs, VET trainers, tutors/ mentors, administrators, marketing managers, learning & skills professionals, and business representative bodies. Their age ranges from 25 to 66 years old, with a length in the current role from less than 1 year to 23 years (between 2 and 11 years of experience in the case of the green entrepreneurs). Both men and women have participated in our survey.

The applied questionnaire contained 5 multiple-choice items and 5 open-ended items. For the multiple choice items the options to answer were provided on a 5-level Likert scale *(i.e. 1 = Very important, 2 = Important, 3 = I do not know / I cannot appreciate, 4 = Not so important, 5 = Not important at all, or similar)*. The interpretation of the results was based on number of answers per category and calculation of the Weighted Mean Score (S).

1. Regarding the *key competences* ***that should be envisaged by the GET-UP green entrepreneurship curriculum,*** the answers suggested (in decreasing order) the following:

- Ecological competences (N = 88, S = 1.55, 61.3% answers of 'Very important' and 26.1% of 'Important')
- Strategy design competences (N = 86, S = 1.55, 54.6% answers of 'Very important' and 36% of 'Important'')
- Social competences (N = 88, S = 1.82, 46.5% answers of 'Very important' and 31% of 'Important')
- Economy competences (N = 88, S = 1.88, 44.3% answers of 'Important' and 39.7% of 'Very important')
- Technical competences (N = 88, S = 1.98, 51.1% answers of 'Important' and 28.4% of ' Very important')

while Accounting Competences seem to be considered of a neutral importance (S = 2.46) or even being 'Not so important' (with the highest number of such answers, among all options – 31.8%).

Additionally, the respondents recommended including in the GET-UP curriculum the following competences:

- team working; working to fulfil different objectives; biology and public health skills *(Romania);*
- communication skills in the mother tongue and into an international language *(Romania, Ireland)*
- risk management skills *(Romania, Cyprus)*
- presentation skills *(Cyprus)*
- marketing competences *(Romania, Spain)*
- networking competences with peers and public & private organizations; competences to analyse the characteristics of the environment where the business is located *(Spain)*
- critical thinking; social innovation and vision; self-awareness; self-efficiency; collaboration; creativity; ethical thinking; self-motivation; self-resilience *(Ireland)*
- sustainable thinking *(Romania, Ireland)*

2. Regarding the ***key skills that should be envisaged by the GET-UP green entrepreneurship curriculum***, the answers indicated (in decreasing order) the following:

- Creating new ventures skills (N = 92, S = 1.41, 67.3% answers of 'Very important' and 23.9% of 'Important')
- Resource management skills (N = 92, S = 1.42, 68.4% answers of 'Very important' and 23.9% of 'Important')
- Research and development skills (N = 92, S = 1.72, 53.2% answers of 'Very important' and 30.4% of 'Important')
- Social responsibility skills (N = 92, S = 1.83, 54.3% answers of 'Important' and 33.6% of ' Very important')

The Franchising skills are less important for a Green Entrepreneurship, in the opinion of the respondents (S = 3.29; 28.2% of 'Not so important' answers and 23.9% of 'Not important at all').

Additionally, the respondents recommended including in the GET-UP curriculum the following key skills:

- environment problems solving skills *(Romania)*
- understanding carbon counting; bio-diesel; ethanol manufacturing; sector specific market research; streamlining the process – producer/processor/end-user; anaerobic digestion *(Ireland)*

3. Regarding ***the key topics that should be approached by the GET-UP green entrepreneurship curriculum*** the respondents recommended (in decreasing order) the following:

- Creating sustainable business ideas(N = 88, S = 1.59, 88.6% of 'Very important' and 'Important' answers)
- Creating green products (N = 88, S = 1.65, 87.5% of 'Very important' and 'Important' answers)
- Green economy (N = 88, S = 1.68, 84% of 'Very important' and 'Important' answers)
- Green business models (N = 88, S = 1.69, 88.6% of 'Very important' and 'Important' answers)
- Commercialising innovation(N = 88, S = 1.70, 85.2% of 'Very important' and 'Important' answers)
- Creating a green business plan (N = 88, S = 1.75, 88.6% of 'Very important' and 'Important' answers)
- Acquire customers (N = 88, S = 1.77, 87.5% of 'Very important' and 'Important' answers)

- Best practice examples of green entrepreneurship (N = 88, S = 1.81, 86.3% of 'Very important' and 'Important' answers)
- Eco-friendly manufacturing processes (N = 88, S = 1.89, 86.3% of 'Very important' and 'Important' answers)
- Market research (N = 88, S = 1.94, 80.6% of 'Very important' and 'Important' answers)
- Social and environmental enterprises (N = 88, S = 1.96, 78.4% of 'Very important' and 'Important' answers)
- Entrepreneurial finance (N = 88, S = 2.03, 73.8% of 'Very important' and 'Important' answers)
- Equity(N = 88, S = 2.37, 57.9% of 'Very important' and 'Important' answers)
- Ecotourism (N = 88, S = 2.40, 59% of 'Very important' and 'Important' answers)

Traditional and online retail(N = 88, S = 2.67, half of the respondents have selected the options 'Not important at all', '(not important' or "I do not know/I cannot appreciate') seem to be not so suitable for the GET-UP curriculum, according to the answers we got.

Additionally, the respondents recommended including in the GET-UP curriculum the following key topics:

- sustainability; adapting and stopping the climatic changes; improving the demand from the consumers/ influencing the consumers' desire for the green services and products *(Romania)*
- customer connection and networking; Customer Relationship Management *(CRM) (Ireland)*

4. As shown in the table 2 below, regarding ***the most appropriate key skill levels for the local target groups to be involved in the GET-UP curriculum-based training*** the first option of the majority of the respondents was 'intermediate', closely followed by 'beginner' level.

Table 2: Distribution of the skill levels per partner country

Skill levels	RO	CY	DE	ES	IE	Total	%
Experts	1	1	2	0		4	5.6
Advanced	7	1	3	0		11	15.4
Intermediate	7	10	2	8	X	27	38
Beginner	0	8	9	8	X	25	35.2
TOTAL	15	20	20	16		71	100

5. In relation to the existing resources that could be used or re-designed for use in the GET-UP green entrepreneurship curriculum, the respondents in Romania recommended training courses on the environmental management problems, the projects in the domain, the previous market researches on green entrepreneurship, the former curricula and training programmes, the environment reports and the financial a& activity reports on green entrepreneurship firms. The Spanish respondents suggested linking GET-UP to other entrepreneurship existing programmes (i.e. Erasmus for young entrepreneurs, the 2012 Incubation Program for Green Entrepreneurs (that became Greenbiz in 2014).

6. As emphasized in table 3, the respondents appreciated that ***the most appropriate media formats for the learning content,*** for target groups in partner countries are, in decreasing order: (1) video files and e-learning platforms; (2) PDF files, forum, Mobile Apps; (3) OER (i.e. Moodle) and MOOCs; (4) traditional format, Prezzi files, webinars; (5) PPT files; (6) audio files; (7) eBook.

Table 3*: Most appropriate media formats for the learning content

FORMAT of the learning content		RO	CY	DE	ES	IE
Traditional format (i.e. handouts, handbook on paper)						
Digital formats	Video file					
	Audio file					
	PPT file					
	PDF file					
	eBook					
	Prezzi file					
	Other: *graphics*					
Interactive formats	e-learning platform					
	Blogs					
	Forum					
	Mobile Apps					
	Webinars					
	OER (i.e. Moodle)					
	MOOCs					
	Other: *face-to-face, YouTube*					

* We used a colour code in which the 5 most appropriate formats have been ranked in descending order, namely:

1st	
2nd	
3rd	
4th	
5th	

Then, we did the ranking based on color frequency (from the greatest frequency to the lowest, from 1st color to the 5th one).

7. Regarding the ***type of assessment framework would be most appropriate to facilitate the measurement of attainments of the GET-UP green entrepreneurship curriculum*** the respondents displayed a large diversity of options: the multiple-choice tests, questionnaire, portfolio, free discussions, online tests, realizing a project, evaluating the team work efficiency, oral and written exams, tutors, reflection papers, creating films, normal tests, scenarios and case studies.

8. Most recommended ***types of pedagogic supports*** by the participants **for facilitating the induction of vocational education tutors into the new proposed blended learning environment** have been: educational software, handbooks, guidelines, worksheets, brochures, flyers, Web pages, handouts, leaflets, , case studies, multimedia support.

9. Analysis of the answers (as shown in table 4) supported us to conclude that ***the most appropriate technology platforms to be developed as e-learning environments*** for the implementation of the GET-UP curriculum should be: (1) Moodle; (2) ILIAS; (3) OLAT, ATutor, Dokeos; (4) Sakai, Fedena, openelms.

Table 4*: Most appropriate technology platform

VLE	RO	CY	DE	ES	IE
Moodle					
eFront					
OLAT					
Sakai					
ILIAS					
ATutor					
Fedena					
openelms					
Claroline					
Dokeos					

* We used the same color code as in table 3.

10. About the ***Green entrepreneurship in the next 5 and in the next 10 years in their country***, the respondents opined that it is a growing field, important and necessary, a sector that supports sustainability in line with European Union trends in the sector, with high potential. It is the future solution in order to protect the environment, to save money and reduce the expenses, both at personal and firm level. It was also stated that Green entrepreneurship should receive more support from the government.

Part C:

Findings from the specific research performed by FIPL

Best Practice E-learning Environments

Web applications are dynamic, interactive systems that help organisations perform tasks and that increase and measure their productivity. Thus, the primary role of a web application is to perform a function that serves the user's tasks and according to defined business rules.

When considering best practices in designing e-learning environments the same core principles and best practices apply to program structure design, User Interface and User Experience design, and the management of the application design and production work, as to any other web application.

Agile working methods allow better coping with changes than the classic waterfall method, and when creating a new application, sketching can be used for exploring different User Interface models and so on.

Best practices in User Experience provide the framework for a repeatable process, a way for us to deliver the value of user experience in a reasonable amount of time, without making the mistakes of those who followed in our past.

User Interface Design focuses on anticipating what users might need to do and ensuring that the interface has elements that are easy to access, understand, and use to facilitate those actions. User Interface brings together concepts from interaction design, visual design, and information architecture.

When summarising best practices for designing a user interface everything stems from knowing the users, including understanding their goals, skills, preferences, and tendencies. With this in mind, points to consider include

- Simplicity of the User Interface
- Consistency and usage of common User Interface elements
- Purposeful layouts
- Usage of typography in creating hierarchy and clarity
- User interaction and informing the user of state changes and possible actions

These are the key design principles that need to be applied in the development of the web based infrastructure foreseen in the project plan.

Best Practice Mini-learning Format Resources

The following key pointers have been identified during the research conducted to identify best practice in the design of mini-learning format resources for adult learners within the context of the GET-UP project. It is imperative that these issues are addressed in the design and development process that follows.

In typical on-line learning scenarios learners are in control of what they learn and when they are learning and there are key presentational, technical and content parameters (as in the tables 5, 6 and 7 below) that need to be considered if potential adult learners are to attracted to the learning content, able to properly engage with the content provided and find the content provided interesting and stimulating:

Table 5: Presentational parameters

Why learn	Adult learners need to know the benefits of learning and this should be presented clearly at the outset of each learning resource
Value proposition	Adult learners learn better when they can see the immediate value and application of learning content
Learning styles	Adult learners like to learn experientially and often approach learning as a problem-solving exercise
Learning pace	Adult learners prefer to learn at a time and place that is convenient for them and at a pace that suits their individual learning capacity

Table 6: Technical parameters

Technical expertise	Resources should be easy to use and presented using the most popular media to avoid scenarios where potential learners are excluded due to their own lack of digital competence
Hardware	Resources should be accessible on common hardware platforms that are readily available to end users and should be scalable for use on PC, laptop, tablet and smartphone
Software	Resources should be developed using the most common software programmes to avoid scenarios where potential learners can't access the resources because they don't have the required software
Internet speed	Resources should be presented in formats and file sizes that permit access even in places where internet access is slow
Accessibility	Resources should be designed to comply with WCAG 2.0

Table 7: Content parameters

Access	Learning content should be presented in small segments that are easily digestible for ease of access
Thematic focus	Learning resources should have a narrow thematic focus covering singular learning objectives
Relevance	Learning resources should address specific work related topics that can be easily integrated into the daily work routine

With such a limited timeframe to deliver training it is essential that a consistent didactic structure is provided to which authors of learning content can refer to ensure a common quality standard is achieved. Micro-learning resources need to address the following 4 areas: Introduction and aims; Key learning content; Reflection and transfer; Assessment.

List of Learning Outcomes

Based on our research findings and consultations with green entrepreneurs, we would that recommend the following learning outcomes should be achieved through the GET-UP entrepreneurship curriculum:

1. Identify the characteristics of a green entrepreneur;

2. Recognise the place of the green entrepreneurship in the commercial world;

3. Demonstrate an understanding of technical knowledge in terms of their chosen green sector – i.e. carbon counting, bio-diesel, etc.;

4. Examine the idea generation process in the green sector and the evolution of a commercially viable business opportunity from an idea;

5. Appreciate and critique current issues in entrepreneurship in the green sector;

6. Demonstrate competence in researching and identifying suitable funding opportunities for the green enterprise sector, such as grants at local, national and European levels, capital finance opportunities, angel investment, crowd funding, etc.;

7. Demonstrate competence in pitching their green business idea to a range of individuals including investors; grants agencies; retailers and sales persons (where a green product is involved);

8. Develop a business plan or a strategy for growing their existing business;

9. Recognise strategies for managing resources and time in a green business;

10. Demonstrate competence in marketing including completing sector specific market research, developing a marketing plan, and social media marketing for business;

11. Demonstrate competence in identifying, connecting with and maintaining relationships with customers.

Conclusions and Recommendations

Green economy, entrepreneurship and business have become more and more important (they are a priority at both policy and practice levels in certain participating countries). In this context, the GET-UP project has a high interest in the market and it is welcome by stakeholders.

The conducted research shows a high interest in the development of green entrepreneurship training programs. Different initiatives, programmes, accreditations exist, but nevertheless, so far, the knowledge and training on these issues is still to be improved. Therefore, the training programme offered by GET-UP is welcome.

To ensure that the GET-UP entrepreneurship curriculum and resources are relevant and useful to green entrepreneurs, the following recommendations can be made:

- there is a need for an emphasis on the development of enterprising and business management skills in the curriculum.
- the curriculum content should be specific to the green sector with information and guidance on ideas generation, business planning, market research and marketing techniques for the green sector specifically.
- in the curriculum and resources, the core competences related to ecological awareness and practice should be reiterated so that entrepreneurs completing the programme gain a holistic understanding of what it means to be a green entrepreneur and the principles and standards they should implement in their enterprises in order to be fully committed to being ‘green’.
- when designing the curriculum, it is important to appreciate that assessments should not be built to evaluate learning; but rather curriculum assessments can be instrumental in developing the knowledge, skills and competences of the entrepreneurs completing the training.
- VET tutors who will be completing the induction programme may be new to the green sector, and so it is important that training materials, resources and supports are designed and developed to address their specific needs; they should receive support through an online portal where they can network with peers, support learners and have access to a toolkit of resources and case studies.
- the legislative framework and the European strategies should be also considered in the GET-UP curriculum.
- the diversity within the green business implies for the GET-UP curriculum the need to ensure that appropriate businesses are engaged.
- learning and skills of green entrepreneurs and owner-managers of existing businesses wishing to green their practices and processes may need to be developed through a number of pedagogical approaches (e.g. training with mentoring and coaching or peer to peer learning).
- we need also to take into consideration the key competences envisaged by the European Commission (digital skills, foreign language competences, communication competences and discussion in mother tongue, literacy and maths competences).

GREEN ENTREPRENEURSHIP TRAINING

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Project Number: 2016-1-DE02-KA202-003277