OPEN UP ENTREPRENEURSHIP

OpEn:

Design and implementation issues

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1 Introduction

The Internet and the WWW are changing our lives: the way we communicate, work, shop, socialise, play and educate. Digital technologies also reshape traditional industries and totally transform the business environment. They speed up and improve the way new innovative products and services are produced and accessed. Information and communication technologies are also affecting the very nature of consumption, competition and how markets operate. In spite of the "revolution" in the global digital economy, European existing and prospective entrepreneurs lack competencies which will enable them to capitalize the gains the digital area has to offer.

The aim of the OpEn project is to motivate, inspire and engage young prospective and existing entrepreneurs towards digital business. This will be accomplished through the design and implementation of an open entrepreneurship course and the development of the related Open Educational Material. The course structure is shaped by the results of Intellectual Output 1 "Skill profile identification" of the project, where we conducted a training needs analysis in order to identify aspects of the training gap between required and existing competences (knowledge, skills, and attitudes) of prospective and existing young entrepreneurs, and especially of those who wish to exploit entrepreneurial opportunities in the digital world.

The objective of this Intellectual Output of the project "Open-up Entrepreneurship, OpEn", is twofold; Firstly, to outline the background and review the state of the art of pedagogies and best practices for entrepreneurial online education and secondly, based on this background, to describe the design and implementation of our projects' approach.

The first objective is achieved by providing a survey of pedagogies for online teaching and learning (Chapter 2). In this part, no constraints are imposed, so the pedagogies described can meet many purposes and contexts of learning and teaching. This section is useful for future instruction designers of online courses in this sector, and illustrates a background body of knowledge guiding our decisions. In the subsequent chapter (Chapter 3) we proceed with a survey of existing best practices in the sector of entrepreneurial education and e-business courses. Following the explosion of Massive Open Online Courses (MOOCs) in the last few years, several leading Universities and Organizations have designed and implemented online courses in this sector. The resources allocated to these courses and the target audience that they address vary. Many good ideas and examples of curricula and ways of teaching and organizing the courses are outlined in Chapter 3 and provide inspiration for the OpEn approach.

The second objective of this Report is achieved in Chapters 4 and 5. There we provide first the course design and structure of its contents and next the specific tools and platforms that we intend to use for its delivery.

This part of the document is inspired by the previous sections; it is constrained, however, by the specific limitations and requirements of the partners and available resources. These include: a) the constraints of the technical annex and description of work, that allocates human resources and imposes time constraints for development, implementation and evaluation of the developed courses, b) the requirements identified by the specific audiences involved in the first Intellectual Output of the Project (IO1 Skill profile identification) including several representatives from stakeholders. In addition, constraints that inform our course design decisions include the expertise of the academic partners and the available technologies for delivering open online courses. Given these constraints in Chapters 4 and 5 we proceed with a detailed description of the OpEn course and its delivery, a plan for its deployment and evaluation, while the Report mainly in the annexes contains examples and guidelines for the developers of the courses, useful for achieving a uniform student experience.

The final chapter, Chapter 6, presents a synopsis of the feedback that we received during a public event held in Manchester Metropolitan University in September 2016. Through this event, we were able to generate some valuable feedback on the OpEn course design and structure, as well as on the delivery of the course through the proposed e-learning platform.

Apart from this projects' partners, this report could be useful for course designers in both professional and academic organizations, who may be interested in implementing online courses for entrepreneurial education and e-business development.

2 A pedagogical approach for OpEn

Prepared by Prof. Vassilis Komis, Media and Learning Technologies Center, University of Patras

2.1 Introduction

The scope of this chapter is to propose a pedagogical approach for the design of an online entrepreneurial course. Here we suggest some online pedagogical methods that meet the requirements of entrepreneurial education and at the same time, we offer guidelines on how we could best design eLearning activities in order to support the OpEn course. The first part introduces online learning approaches, giving emphasis on those that involve an active engagement from the part of the learners. The second part presents an overview of the existing literature related to the didactics and pedagogy of entrepreneurial education, with an explicit focus on active learning. This part also offers a literature review of online entrepreneurial education existing courses/cases. Towards the end of this chapter, we offer recommendations on certain online educational methods which could be used by the instructors of the OpEn course, taking into account the use of a Learning Management System (LMS).

2.2 Online and Distance Learning

To date, a variety of terms have been used in the literature in order to describe online learning, including-learning, Internet learning, distributed learning, networked learning, virtual learning, computer-assisted learning, Web-based learning, and distance learning. The main two features that differentiate distance learning from 'traditional' learning environments are: a) the degree of technology usage and b) the gradual shift of control and responsibility of the learning process to the learners, giving them the opportunity to learn anytime, anywhere. This shift of control during the learning process to the learners' side seems to positively influence their learning effectiveness. The objective of a Learning Management System (LMS) is (a) to bridge the distance between the learner and the provided learning material and (b) to embed social interactions within the same environment, thus providing to the learners the opportunity to become active participants and not mere receivers of information. In this context, constructivist and sociocultural theories appear to influence considerably the learning procedure and strengthen the perceptions of the educational community towards an adoption and effective integration of LMS system in the educational process (Filippidi et al., 2010). Khan (1997) defines online instruction as a procedure which facilitates instruction to a remote audience, using technology as the medium. However, online learning involves more than just the presentation and delivery of the materials through the use of the Web; it is the learner and the learning process that should be the focus of online learning. (Ally, 2004)

There are many pedagogical approaches used to design online courses. Different learning strategies and pedagogical practices have been used in the past in order to motivate learners, promote meaningful learning, encourage interaction, provide feedback, facilitate contextual learning, and provide support during the learning process. Constructivism appears to be one of the most important and effective pedagogical approaches which can be used in every learning environment.

2.3 A Constructivist Pedagogical approach of Learning

Constructivists consider learning as an active process; knowledge is not received from external sources, it is rather the outcome of the learner's interpretation and active participation in the learning process. The emphasis of Constructivists is in situated learning. Situated learning is a learning strategy based on how individuals acquire professional skills, extending research on apprenticeship into how legitimate peripheral participation leads to membership in a community of practice (Lave and Wenger, 1991).

In his transformation theory, Mezirow (1991) uses Constructivism in order to explain how people learn. According to Mezirow (1991), learning involves five interacting contexts: the frame of reference or meaning perspective in which the learning is embedded, the conditions of communication, the line of action (process) in which the learning occurs, the self-image of the learner, and the situation encountered during the learning process (p. 13).

2.4 Implications for Online Learning

Ally (2004) argues that Constructivisms' implications for the online learning are as follows:

1 Learning should be an active process. Participants are active by doing meaningful activities, which facilitates the creation of personalized meaning.

2 Participants should construct their own knowledge which is facilitated by good interactive online instruction.

3 Collaborative and cooperative learning should be encouraged to facilitate constructivist learning.

4 Learners should be given control of the learning process, where learners are allowed to make decision on learning goals.

5 Learners should be given time and opportunity to reflect. When learning online, students need the time to reflect and internalize the information. Embedded questions on the content can be used throughout the lesson.

6 Learning should be made meaningful for learners. The learning materials should include examples that relate to students, so that they can make sense of the information. Assignments and projects should allow learners to choose meaningful activities to help them apply and personalize the information. (Ally, 2004)

2.4.1 Learning Activities

To facilitate online learning, the Illinois Online Network (ION) Online Teaching Activity Index (http://www.ion.uillinois.edu/resources/otai/) provides an exhaustive list of activities that instructors of online courses may use, including:

1. Art Projects
2. Article (Journal) Critiques
3. Audio Recordings (Includes Podcasting)
4. Blogging
5. Brainstorming
6. Case Briefs
7. Case Studies & Case-Based Instruction
8. Community Action
9. Concept Mapping
10. Debate
11. Design Projects
12. Discussion Question Activities
13. Document Analysis
14. Drill and Practice
15. Essays
16. Fieldwork (Includes Apprenticeship)
17. Fishbowl
18. Gaming
19. Group Debugging
20. Group Problem Solving
21. Group Reports
22. Hypothetical Situations
23. Ice Breakers
24. Inductive Reasoning
25. Interviews
26. Jigsaw
27. Journaling
28. Kinesthetics
29. KWL
30. Laboratory Experiments
31. Learning Contracts
32. Literature Review
33. Multimedia Presentation (Video and Film)
34. Oral Reports
35. Peer Editing / Review
36. Portfolios
37. Presentations
38. Procedural Demonstration (Perform a given action)
39. Q & A (Students pose questions)
40. Quizzing
41. Reflections
42. Review (Play, Movie, Audio, Book, etc.)

43. Role Playing
44. Scavenger Hunt
45. Simulations
46. Socratic Dialogue
47. Webquest
48. Web designer lorem ipsum generator
49. Wikis

Instructional design for online courses is a process which interconnects different pedagogical approaches and learning activities, the use of online tools and the presentation of the learning content. This process should meet specific quality standards in order to motivate distance learning. According to the Quality Grid of epprobate (http://epprobate.com/index.php/grid-for-quality), a group of e-learning experts who have come together to focus upon the quality of e-learning and its component parts, each area of an online course should be reviewed using a list of criteria. These criteria, which can be used as guidelines to educators who wish to prepare online courses, are listed below:

2.4.2 Course Design

1. *Provision of course information, learning objectives and instructional guidance*

The courseware provides learners with all the information needed, including clear and appropriate learning objectives and sufficient instructional guidance.

2. *Constructive alignment*

The learning objectives, instructional strategies and assessment processes (provided within the courseware) are congruently aligned with each other, in order to effectively assist learners in achieving the intended learning objectives.

2.4.3 Learning design

3. *Learner needs*

The instructional strategies meet the learner's needs, and are matched to the learner's profile (skill level, age group, specific constraints, etc.)

4. *Personalization*

The courseware allows personalization of the learning process and supports the development of learner autonomy.

5. *Instructional strategies*

The courseware provides an appropriate range of instructional strategies that motivates, engages, and supports active learning through an appropriate range of the forms of learning:

- **Acquisition** – where learning is done by listening to, reading, or watching materials that are presented in such a way as to gain the attention and interest of the learner
- **Inquiry** - where the learner is provided with a focus for enquiry, resources, and guidance for the learning process
- **Practice** - where the learner is provided with interactive exercises, games, opportunities to interact with representations of the domain, or other activities that provide feedback

- **Communication** - where the learner is encouraged and supported in communicating with other learners (formally and/or informally) and/or with tutors (e.g. coaching)
- **Construction** – where the learner is provided with opportunities to learn, or to demonstrate the outcome of their learning, through producing something - such as an essay, or a design.

2.4.4 Media design

6. Media integration

The utilization of media (i.e. text, pictures, audio, and video) and tools effectively enhances comprehension of the course content and empowers implementation of the instructional strategies.

7. Interface

The courseware interface (in terms of navigation and web design) is user friendly, corresponds to current practice, and allows learners to efficiently monitor their progress through the course.

8. Interoperability and technological standards

The courseware complies with common technical standards (e.g. SCORM, IMS) thus supporting interoperability.

2.4.5 Content

9. Accuracy and values of content

The content is an accurate representation of the domain from a particular perspective or range of perspectives, where appropriate issues of values are addressed openly. The content is written so as to avoid culturally biased terms and examples.

10. Intellectual property rights

The courseware supplier has the rights to use the materials in the courseware. Where material is provided as an OER, the rights of use and reuse are clearly stated with an appropriate Creative Commons license.

11. Legal compliance

The content abides by all relevant national and international legislation with reference to content, including laws related to bias, slander, and promotion of specific values.

A more detail set of quality standards that can help instructors during the design of their course can be found also at the "The Quality Matters™ Higher Education Rubric 2011 – 2013 Edition" (http://www.elo.iastate.edu/files/2014/03/Quality_Matters_Rubric.pdf).

2.5 Entrepreneurial Education: basic approach on "how"

We could define Entrepreneurial Education as "any pedagogical programme or process of education for entrepreneurial attitudes and skills, which involves developing certain personal qualities" (Fayolle and Klandt, 2006, p. 1).

Entrepreneurial education programs propose a paradigm shift from the "traditional" or "routinized" way of teaching and learning towards an "entrepreneurial" one. Entrepreneurship curricula propose an active,

process-based, project centric, collaborative, experiential and multidisciplinary approach. Pedagogical approaches that present similarities to the "entrepreneurial" paradigm are experiential learning, situated learning, problem / project-based learning, adult learning, cognitive apprenticeship and social constructivist learning (Lackeus,2015). However, entrepreneurial education illustrates some unique features, such as focus on value creation to external stakeholders (Bruyat and Julien, 2001), interaction with the outside world (Fayolle and Gailly, 2008), and artifact creation (Lackéus, 2015). Those features explain why entrepreneurial education can trigger much higher levels of motivation, experienced relevancy, engagement and deep learning than can other pedagogical approaches (Lackéus, 2015). Table 2-1 presents the transition from the conventional to the entrepreneurial paradigm in education.

	Conventional paradigm	Entrepreneurial paradigm
Who?	Students in standalone entrepreneurial programs, courses, etc.	Integrated entrepreneurial education in curriculum
Why?	Certification	Value creation
By whom/ for whom?	Divide between disciplines, as well as between academia, society and business, teacher regulated learning	Multidisciplinary and connection between academia, business and society, teaching performed both by instructors (both academic and practitioners) and students, co-regulation of learning etc.
What?	Theory and Logical thinking, Learning focused on the past, Education about entrepreneurship (knowledge)	Entrepreneurial and creative thinking (Shepherd and Douglas, 1996) in practice, Learning focused on the present (Gibb, 1987), Artifact that creates value (financial, cultural, or social), Education about, for and in/through entrepreneurship (Knowledge, skills, attitudes)
When? /where?	Location and time fixed	Location and time flexible (Gibb, 1987) , preferably for an extended period (Lackéus, 2015)
How?	Conventional and structured teaching methods, teacher-centric	Deep and complex experiential and action learning, trial and error,, student-centric
Evaluation and assessment	Measuring, Narrow measurement output of programs (e.g. number of start-ups), Dependence on authority ("expert validation"), product assessment	Evaluating , Broadly defined set of outcomes where measurement is focusing on local market needs and context, Thoughts, actions, emotions (Lackéus, 2014), Self-validation (Gibb, 1987) and peer/group-validation, product and process assessment
Structural/Institutional	Entrepreneurial education driven by external factors	Entrepreneurial education driven both by external factors and the university itself

Table 2-1: The transition from the conventional to the entrepreneurial paradigm in education (Daskalou and Komninou, 2016)

2.6 Active based learning

The active engagement of participants during entrepreneurial education programs is accomplished through their participation in problem-solving. This active engagement could **range** from problem-solving during traditional educational programs to venture creation of start-ups. Learners could start working on simple projects, such as exercises that do not have a business potential, proceed to business problems with limited potential, and finally produce high-potential business ideas. The range of students' involvement and pedagogical approaches are illustrated in Figure 2-1 (Rasmussen & Sørheim, 2006).

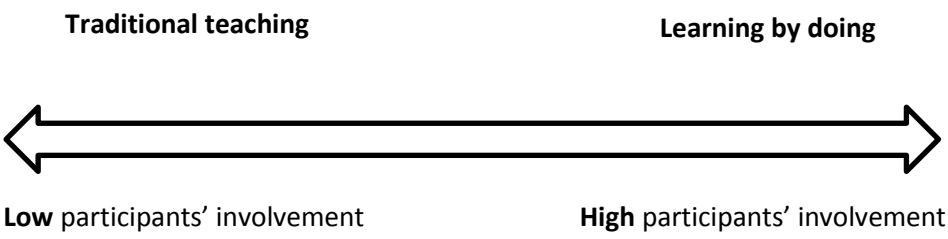

Figure 2-1: The transformation of educational environments

Active learning refers to instructional techniques that allow learners to participate in learning and teaching activities, to take the responsibility for their own learning, and to establish connections between ideas by analysing, synthesizing, and evaluating. Bonwell and Eison (1991) define active learning as anything that involves learners in *doing* and *thinking* about what they are doing. Active learning is more focused on cognitive development than the acquisition of facts and transmission of information. The role of the learner is not being a passive listener and note taker. The learner's role is to become involved in learning activities such as discussions, reviewing, and evaluating, concept mapping, role playing, hands-on projects, and cooperative group studies in order to develop higher-order thinking skills such as analysis, synthesis, and evaluation.

The benefits of active learning (Bell and Kozlowski 2008; Bonwell and Eison 1991; Johnson et al. 1991; Mayer 2004) can be summarized as follows:

1. Promote developing higher-order thinking skills and adaptive performance.
2. Support self-directed learning.
3. Promote students' interaction with each other and teachers.
4. Allow students to think about and process the information.
5. Allow students to connect the content to real life.
6. Promote a more positive attitude toward the subject matter.
7. Allow students to build group study skills and communication skills by working together.

8. Promote alternative forms of teaching and assessment.
9. Promote critical reflection and taking control on own learning.

How to make students more entrepreneurial is the most important question. Applying a learning by doing approach should be the first decision for an instructor. The issue of *what* needs also to be properly addressed. Active leaning cannot be useful when imposing an interaction with outside stakeholders without a clear-end result. Additionally, entrepreneurial education should care about society needs, and strive to create value that goes beyond the needs of the teacher and the classroom. Thus, instructors are invited to use value creation tools, methods and processes (Lackeus, 2015).

An active-based approach suggests that learning is more efficient when it is driven by meaningful activities. Such activities require participants to be actively and meaningfully engaged with the learning process, as opposed of being passive recipients and consumers of recourses and information (Naidu 2007). Active-based learning strengthens participants' engagement with the learning process, enhances motivation and collaborative relationship with peers. Based on this approach a series of teaching methods have been implemented. One advantage of those methods is the need to interact with the real word through specific problems to solve or artefacts to create.

A quick review of the literature of online entrepreneurial education activities in higher education, indicates that the most commonly used technologies include LMS platforms, MOOC platforms, Serious games, Virtual worlds, Wikis and Digital storytelling. Table 2-2 represents only a preliminary analysis of how the four key features of entrepreneurial learning (i.e. action, value creation, team-working, interconnection outside real world) are supported in these cases, (Daskalou and Komninou, 2016).

	Scope	E-learning technology	Full online /blended	Action	Value creation	Team-work	Interconnection with outside real world
Al-Atab & DeBoer, 2014	Entrepreneurship education	MOOC OpenLearning.com.	Full online with super-vision	Group project, brain rewiring exercise, assignments	Develop a business idea	Forums, Karma Points, badges	-
Hardin et al., 2013	Entrepreneurship education	Second Life (SL)	-	Students sell and purchase goods and services in SL	Project for building a business in SL	Work in teams in SL	Existing SL entrepreneurs exploit project results
Romero, M. 2013	Entrepreneurship education	MOOC LORE Serious Games	-	Games played	Game simulation of a small business	Discussion forums	-
Welsh & Dragusin, 2013	Present MOOCs for entrepreneurship education	MOOC platforms: coursera, edx, udacity	Full online	Quizzes, Week assignments Capstone project	Business canvas model, Business plan	Discussion forums, Peer grading, Study groups	Case studies of business stories, Entrepreneurs as educators or TAs
Bellotti et al. 2012	Entrepreneurship education	Serious Games	Blended, f2f and distance activities	"Playoff" competition Homework games	-	Play in teams, game debriefing	Talks by invited entrepreneurs
Weeks & Seymour, 2009	Innovation and entrepreneurship course	Wiki	Blended	Generate knowledge in wiki & assignments	-	-	-
Mennecke et al. 2008	Teach e-commerce in a Masters of Business Administration elective course	Second Life (SL) Streaming lectures	Blended: distance and in studio classroom/ Full online: use SL as a virtual classroom	Scavenger hunt activity in SL	Final report for a local non-profit organization in SL	Team exercises in SL	Real-life problems presented by business leaders and entrepreneurs
Klamma et al., 2006	Virtual Entrepreneurship Lab	Digital storytelling platform	Blended	Student can change the narrative	-	Compare story, discuss it	-

Table 2-2: Literature review of online entrepreneurial activities related to key features of entrepreneurial education (Daskalou and Komninou, 2016)

2.7 Proposed pedagogical approach for OpEn

The design of an online entrepreneurship course has to address special features of action, value creation, team-work and interaction with the outside real world (Daskalou and Komnimou, 2016). The choice of the appropriate digital tools for the support of these characteristics requires a shift from the more 'conventional' towards – what has been termed as - an 'entrepreneurial' educational paradigm. **The answers to questions "for whom?, what?, how?, by whom?, when?" together with the assessment and evaluation process are better understood as engaged in a constant dialectical relationship up until the instructional design of the online course is finalised**. Towards this direction a number of ideas using digital tools can be found in Table 2-3.

Action	• Form online student engagement activities (assignments, problems, projects, experiments, laboratory exercises) with the purpose of creating artifacts valuable outside the classroom. • Activities should utilize real-world cases and data • Digital tools could range from simple software (e.g. worksheets, blogs, wikis, diaries) to complicate utilities (e.g. serious games and virtual worlds)
Value creation	• Highlight the need for value creation. • Prompt for innovation. • Use digital tools to help students act upon the needs of society at large. • Utilize digital tools that support modeling value (e.g. online tools for Business Model Canvas)
Team-work	• Setup team-work and use digital tools to support it: from simple online forums and google groups to social media groups, online brainstorming and specialized groupware utilities.
Interaction with the outside real world	• Engage alumni and practitioners with the online course as e-educators, e-TAs and e-mentors. • Use existing entrepreneurs' video case studies from success and failures. • Entrepreneurs should impose real world problems.

Table 2-3: Guidelines for the design of an online entrepreneurial course (adapted from Daskalou and Komninou, 2016)

2.7.1 How

2.7.1.1 Methods

The learning process should be organized and planned with a series of well- designed learning activities, which guide participants to their final outcome. The learning activities can provide the basis for the deliberation of the intended knowledge, skills and mentalities. Their type and structure depend upon factors, such as the learning outcome, the group of the participants and the content of the course itself. Furthermore, in some cases, ill-structured problems are considered as more appropriate than well-structured sequence learning activities. Depending on the circumstances, participants may carry out all or some of these activities either individually or in groups.

There are many types of educational techniques and actions, which can occur at various times and levels in the learning environment. These actions may involve participants actually creating something, but they also include watching a video clip or reflecting upon a resource, taking actions or making decisions about an incident or a problem. Moreover, they can include quizzes, assignments, laboratory exercises, using digital and online tools. Additionally, these actions should be based on entrepreneurial problems and data derived from the outside real world, and finally they should also express the need for creating value -, suggesting innovative solutions and use digital tools to build artefacts for the demands of the outside world (Lackéus, 2015).

2.7.1.2 Techniques

Table 2-4 presents the main educational techniques that can be used in an entrepreneurial training environment. Moreover, it proposes tools (in the case of OpEn, tools of the open eclass Learning Management System), that can be used in order to implement each technique in an online environment. A short description of eclass tools is presented in (Avouris, 2016).

Technique	Description	E-class Tools
Lecture	Oral presentation intended to present information or teach people about a particular subject.	Documents, course material (texts, presentations, pictures, diagrams) Multimedia: video, enhanced video
Demonstration	Demonstration involves showing by reason or proof, explaining or making clear with examples or experiments.	Multimedia: audio-visual material-video (videos: how to use a software, demonstration of basic tool usage) Glossary E-book Links
Practice	Practice is the act of engaging participants in an activity repeatedly, for the purpose of improving or mastering it	Exercises: Quizzes, multiple choice exercises, text filling, matching, exercises Assignments: writing reports Questionnaires
Storytelling	Storytelling is a technique for sharing and interpreting experiences	Multimedia: video, enhanced video Exercises: Quizzes, multiple choice exercises, text filling, matching, exercises Assignments: writing reports Questionnaires
Solving Problems	Solving problems and writing assignment is a	Assignments: writing reports

	specified task or amount of work assigned to or undertaken by the participant, as if assigned by the instructor	Documents, course material (texts, presentations, pictures, diagrams) Multimedia: video, enhanced video
Case-study	A report about a person, group, or situation that has been studied over time; *also* : a situation in real life that can be looked at or studied to learn about something; *also*: an intensive analysis of an individual unit stressing developmental factors in relation to environment	Multimedia: video, enhanced video Exercises: Quizzes, multiple choice exercises, text filling, matching, exercises Assignments: writing reports
Brainstorming	A group problem-solving technique that involves the spontaneous contribution of ideas from all members of the group; *also*: the mulling over of ideas by one or more individuals in an attempt to devise or find a solution to a problem	Wiki Forum Chat tool
Discussion	Consideration of a question in open and usually informal debate	Forum Chat tool
Team-work	Work done by several participants with each doing a part but all subordinating personal prominence to the efficiency of the whole (cooperation)	Wiki Dropbox area Agenda
Collaboration	Collaboration is the process of two or more participants working together to realize shared goals	Wiki Blogs Chat tool Dropbox area Agenda
Evaluation	Personal assessment, or peer evaluation	Personal assessment: Exercises: Quizzes, multiple choice exercises, text filling, matching, exercises Assignments Questionnaires Peer evaluation: Blogs, Forum, Wiki

Table 2-4: Main educational techniques for online entrepreneurial training using LMS

2.8 Conclusions

Action-based learning can be a very complex approach, but nonetheless effective. This approach requires a great deal of detailed and careful planning and guidance throughout the learning and teaching process. Thus, incorporating action-based learning in the designing of an online course will be more demanding but it does increase the pedagogical outcomes. Moreover, the designing of an online entrepreneurship course has to address the special features of action, value creation, team-

work and interaction with the outside real world (Lackéus, 2015). Finally, since the course will be designed in order to facilitate distance and asynchronous learning, the proposed approach should be adjusted to these two specific requirements. Hence, the pedagogical approach should take under serious consideration the active engagement of the participants who are physically apart and take their own pace of learning.

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3 Best practices of online courses for entrepreneurship and e-business

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3.1 Introduction

Information and Communication Technologies (ICTs), and particularly the Internet, are driving innovation, skills, labour productivity and growth (OECD, 2011a, 2011b). New applications are also key enablers for developing new skills, novel business models and innovative activities within the society and all sectors of the economy (e.g. green growth) (OECD, 2012).

Based on a recent digital business study of MIT Sloan Management Review and Deloitte, the strength of digital technologies —social, mobile, analytics and cloud— does not lie in the technologies individually. Instead, it stems from how companies integrate them to transform their businesses and how they work (Kane et al, 2015). In this respect, another key finding is that what separates digital leaders from the rest is a clear digital strategy combined with a culture and leadership poised to drive the transformation.

Moreover, according to Gartner (2015), business leaders and organizations must learn today how to identify what information provides strategic value, how to access data from different sources, and explore how algorithms leverage Information of Everything to fuel new business designs (Gartner, 2015). As a result, technological advance in business evolves in conjunction with investing in organizational capabilities and skills that ensure their impact and drive new value-generating business models (Kane et al, 2015).

The importance of e-skills for economic development is widely acknowledged while it is profound that shortages and mismatches in e-skills, and the resulting digital divide negatively affect growth, competitiveness, innovation, employment and social cohesion in Europe. Furthermore, the acceleration of change in the economy towards the digital revolution, such as the use of platforms for businesses, use of robots, 3D printing or the shared economy, has revealed an increasing and urgent need for digital skills (European Commission, 2014).

Powerful shifts change how people and businesses will work, interact, and prosper in an era of profound digital transformation, under emerging tools and business models, such as the use technology to match producers and consumers in multisided marketplaces which unlocking hidden resources and creating new forms of value (Parker, Van Alstyne and Choudary, 2016). It is because of these trends, European Commission recognized the importance of entrepreneurship education to the Oslo Agenda[1]. The aim of the "Oslo Agenda for Entrepreneurship Education" is to step up progress in promoting entrepreneurial mindsets in society, systematically and with effective actions[2].

[1] http://ec.europa.eu/growth/smes/promoting-entrepreneurship/support/education/projects-studies/index_en.htm

[2] The Agenda is a rich menu of proposals, from which stakeholders can pick actions at the appropriate level, and adapt them to the local situation. Relevant actors are indicated for each one of the proposed actions.

Over the past two decades, powerful economic, technological and social forces have been unleashed, transforming our world in ways that few experts would have predicted. The new upcoming "digital age" underlies the evolution of many traditional and powerfully disruptive industries and companies. As a result, the idea of infusing entrepreneurship into education has created new trends, especially with respect to "e-business skills". Moreover, as Brynjolfsson and McAfee (2014) claim the best strategies for survival, offering a new path to prosperity, include revamping education so that it prepares people for the next economy instead of the last one, designing new collaborations that pair brute processing power with human ingenuity, and embracing policies and tools that make sense in a radically transformed landscape (Brynjolfsson and McAfee, 2014).

However, what is meant when by "entrepreneurship in education" differs significantly (Lackeus, 2015). Sometimes, entrepreneurship in education means that students should be encouraged to start up their own company while some others mean that it is not at all about starting new organizations, but that it instead is about making students more creative, opportunity oriented, proactive and innovative. In this respect, the aim of the present report is to provide a short overview on best practices putting the idea of "entrepreneurship" into theory and practice through platform and online learning approaches.

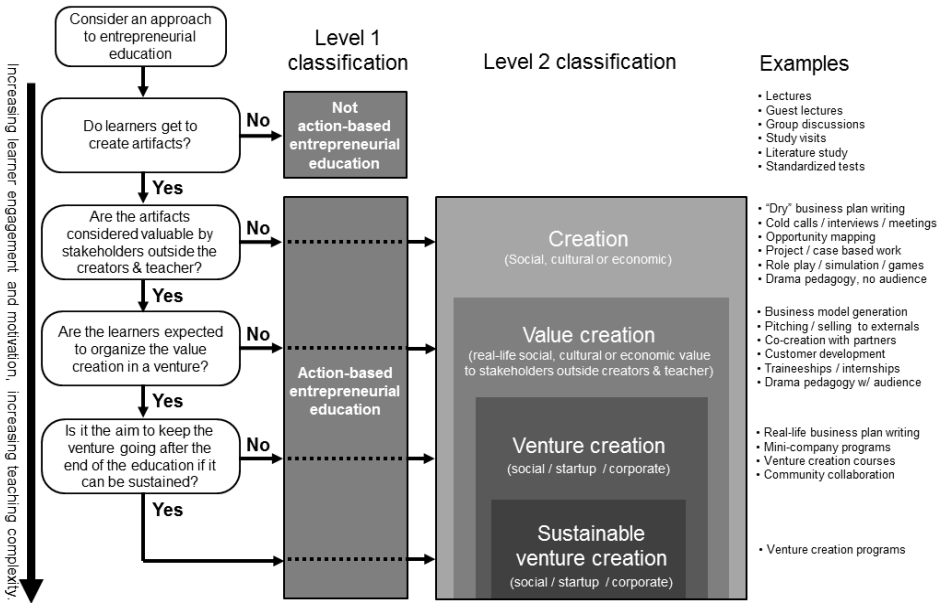
3.2 Entrepreneurial Education

According to Lackeus (2015), the main goal of most entrepreneurial education is to develop some level of entrepreneurial competencies. As a result, entrepreneurial competencies are defined mostly as knowledge, skills and attitudes that affect the willingness and ability to perform the entrepreneurial job of new value creation (i.e. Creating a business plan, Creating a financial plan, Obtaining financing, Securing access to resources). This definition aligns with much of the literature on competencies in general as well as on entrepreneurial competencies (Sánchez, 2011, Fisher et al., 2008).

Today, entrepreneurial education has seen worldwide exponential growth in higher education institutions and was in 2001 offered at around 1200 business schools only in United States (Kuratko, 2005; Katz, 2008). Entrepreneurial education has become an important part of both industrial and educational policy in many countries (Ohe, 2012; Mwasalwiba et al., 2012; Hytti and O'Gorman, 2004).

As regards to educational methods, it seems that activity based conceptual models deemed to be central to achieving progression in entrepreneurial education. Lackéus (2013) provides a classification of action-based entrepreneurial education based on four types of action-based pedagogy, a question scheme and some examples of pedagogical approaches (Figure 3-1).

Moreover, some generic features highlighted in several contemporary approaches as regards to entrepreneurial education. The recent years, it seems an agreement has risen among researchers that entrepreneurial education needs to use action-based experiential approaches. In this respect, interaction with the outside world is a key aspect of entrepreneurial education and many existing courses encourage the involvement of stakeholders beyond the teacher/students, creating value outside the course, situating the latter within a social context (regulatory framework, etc).

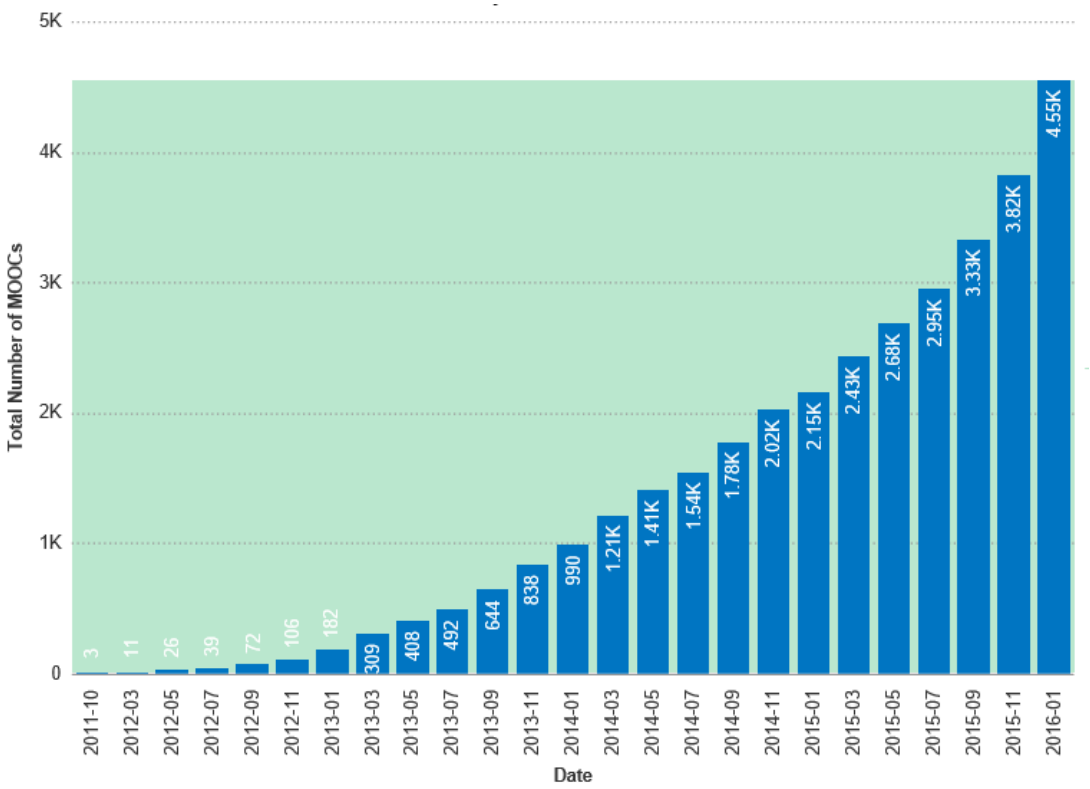


Source: Lackéus, 2013.

Figure 3-1: Classification of action-based entrepreneurial education.

3.3 Open Online Courses

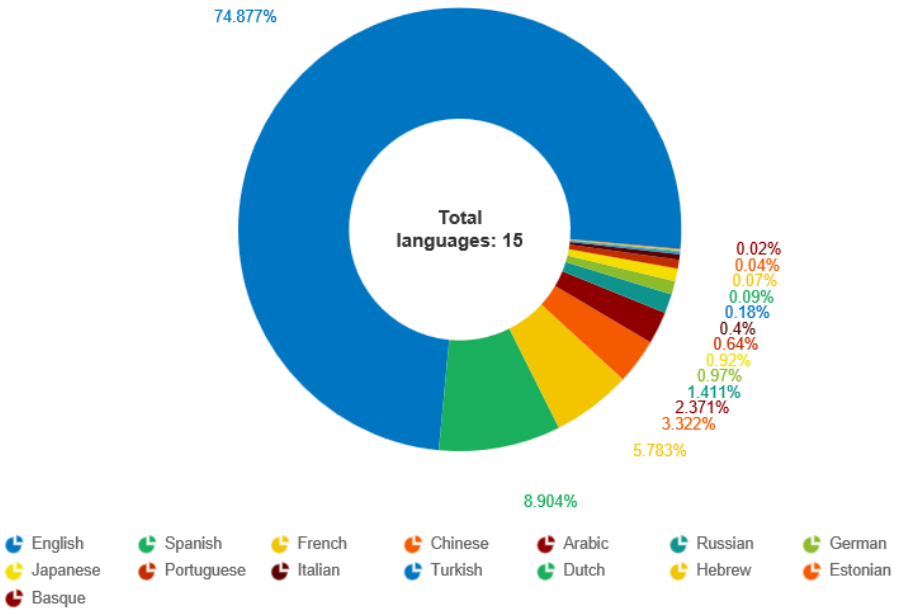
The rapid development of 'massive open online courses' (MOOCs) is currently generating considerable expectations for a shift in the traditional modes of education. Since MOOCs first entered the scene of higher education, massive open online courses have gone from cameras at the back of U.S. college classrooms to several full-fledged ecosystems in the global industry of online learning. Despite the great appeal of MOOCs due to the growing opportunities they offer in the verticals of Distance Education, Lifelong Learning, Continuing Education, and making a Higher level education both free and accessible, MOOCs have also been criticized heavily by established academics for sanctioning education attainment, teaching methods that are unprofessional, as well as the corporatization of higher education (Clarke, 2013; Zemsky 2014). Nevertheless, there is an exponentially growing investment in this stream of education as shown in Figure 3-2 below.



Source: http://www.onlinecoursereport.com/state-of-the-mooc-2016-a-year-of-massive-landscape-change-for-massive-open-online-courses/

Figure 3-2: Growth of number of available MOOCs.

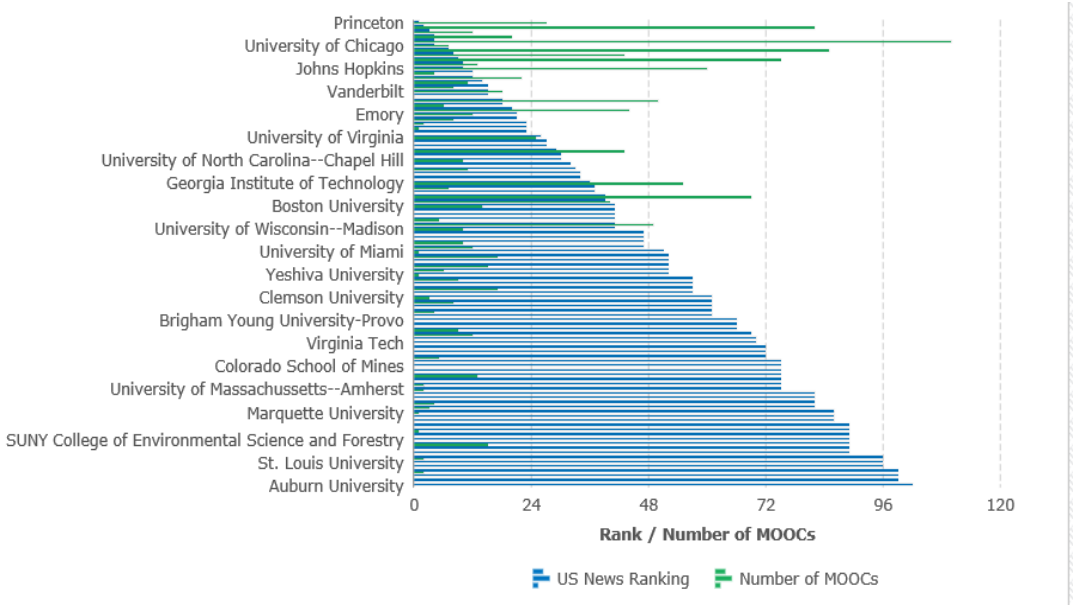
It is interesting to note that the overwhelming majority of MOOCs (approximately 3 out of 4 MOOCs) are offered in English language (see Figure 3-3).



Source:http://www.onlinecoursereport.com/state-of-the-mooc-2016-a-year-of-massive-landscape-change-for-massive-open-online-courses/

Figure 3-3: Distribution of language of Institution in MOOCs (2015).

According to Welsh & Dragusin (2013), xMOOCs will probably tend to have a greater impact on higher education due to their main strengths: high quality content provided by leading partnering universities, existence of deadlines and grades, the attribute of being no cost, and consistent financial support for development. Nevertheless, there is a question revenue models and how to sustain being no cost to those being educated. As Welsh & Dragusin claim, online courses, offered for years by many universities, were mainly designed according to the traditional lecture format, which might explain their lack of success. However, the new platforms launched in 2012 include Udacity, Coursera, edX, and offer free top quality MOOCs, with huge enrollment levels. Some of the most renowned U.S. universities, including Stanford, Harvard, and MIT, among others, have opened the digital doors to the masses with aspiration to permanently change the education landscape on entrepreneurship education (Welsh & Dragusin, 2013). More specifically, based on empirical evidence (see Figure 3-4) for Universities offering MOOCs in the US, the majority of MOOCs are offered by the Top 5 Universities (as they have been ranked by the U.S. News and World Report's on Top 100 National Universities).



Source:http://www.onlinecoursereport.com/state-of-the-mooc-2016-a-year-of-massive-landscape-change-for-massive-open-online-courses/

Figure 3-4: University Ranking Vs. Number of MOOCs provided

Hence, it begs the question why the production and supply of MOOCs at a global scale is concentrated on a handful of the most expensive, highly valued, and heftily-endowed universities in the world. The answer lies in the considerable costs associated with the production of MOOCs. *Specifically, much of this inequity can be attributed into the high cost of designing, developing, and building a MOOC, a cost often unfeasible for the non-elite Higher Education Institutions*. Clarke (2013) has been very illustrative in demonstrating that *at the heart of the marvellous MOOC educational mission is a profound and probably unresolvable tension between the goal to educate and to monetise.*

Reeves and Hedberg (2014) identify three types of MOOCs:

- cMOOCs-the first generation started in 2008, focusing on knowledge creation and generation (e.g., CCK08); learners' creativity, autonomy, and networking are encouraged; learners are expected to enrich the course's content.
- xMOOCs- the second generation started in 2012, are based on a more traditional format, with fixed structured content, centralized discussion forum support, and automated or peer-graded evaluation (e.g., Coursera and edX); students are required to master what they are taught (Welsh & Dragusin, 2013).
- pMOOCs- the pMOOC model is the latest to emerge (Reeves & Hedberg, 2014). In a pMOOC, participants collaborate online to complete a project (e.g., design a memorial) or to address a problem (e.g., develop a plan for urban renewal of a declining area of a town or city).

Table 3-1 below outlines the differences between the three kinds of MOOCs

Type of MOOC	**cMOOC**	**xMOOC**	**pMOOC**
Learner Role	Active	Passive	Active
Instructor Role	Co-Learner	Sage on video stage	Guide on the side
Learning Theory	Connectivism	Behaviorism	Constuctivism
Primary Pedagogy	Knowledge integration	Knowledge duplication	Knowledge production
Metaphor	'We link movies'	'We watch movies'	'We make movies'
Development Approach	Learning design	Instructional design	Educational design research
Primary Type of Assessment	Self Assessment	External and/or Peer assessment	Self and/or Client assessment
Funding Source	Seat of the pants funding	Large external funding	Moderate client provided funding

Source: Reeves and Hedberg (2014)

Table 3-1: Differences among three types of MOOCs

Nowadays, despite the reservations for the effectiveness of just online entrepreneurial courses and the concerns over the sustainability of the MOOCs venture, there is a plethora of online courses in open platforms (coursera, edx, udacity, etc.). This report aims to clarify some major case studies on online entrepreneurial courses for the purposes of the OpEn project and the e-module design particularly.

3.4 Case studies

3.4.1 HPLife: Online training for entrepreneurs[3]

The Hewlett-Packard Learning Initiative for Entrepreneurs (HP LIFE) is a global program that helps students, potential entrepreneurs, and small business owners establish and grow their businesses by providing online and face-to-face training in IT and business skills. EDC has developed an online modular curriculum for HP LIFE that covers the topics of finance, marketing, operations, and communication.

More specifically, HP LIFE e-Learning is a free, peer-reviewed online training program designed for students, entrepreneurs, and small-business owners to develop business and IT skills. HP LIFE e-Learning courses are modular, interactive, and relevant in today's business economy. Moreover, HP LIFE e-Learning courses are full of information and practical exercises, while each course takes approximately 30 minutes to complete. There are 23 course topics which cover core business competencies in the areas of finance, marketing, operations, communication, and special topics such as leadership, social entrepreneurship, and energy efficiency. Students receive a certificate of completion for each course that can be printed or downloaded and there are over 200,000 users globally and available in six languages. HP LIFE e-Learning can be used as[4]

- A resource for a high school or community college entrepreneurship or business courses
- Part of an entrepreneurship club or program
- A tool for the SkillsUSA entrepreneurship business planning contest
- A guide for technical students who want to start a business
- Professional development for people wanting to learn more about starting or growing a business.

HP LIFE e-Learning includes 5 categories and 25 self-paced courses:

- Operations 6
- Marketing 5
- Finance 5
- Communication 5
- Special topics 4

The benefits of the Hewlett-Packard Learning Initiative for Entrepreneurs involve its global perspective and the modular curriculum character. A wide range of topics is provided which is very relevant to the business economy and the market needs. However, more courses could be added on the way along with the technological trends.

3.4.2 edX

Harvard University and the Massachusetts Institute of Technology (MIT) decided to partner to form edX (www.edX.org), a notfor- profit venture (based in Cambridge, Massachusetts), with a joint funding of $60 million ($30 million each). The edX starting point was an online course, launched in spring of 2012 by MIT professor Anant Agarwal (now the first edX President), with an identical curricula to that of the classroom-based course. The primary goal of edX is to "improve teaching and learning on campus by experimenting

[3] http://www.life-global.org/

[4] http://www.skillsusa.org/programs/hp-life/

with blended models of learning and by supporting faculty in conducting significant research on how students learn" (www.edx.org/faq). To the existing three top U.S. universities in the partnership (including University of California, Berkeley), six other U.S.-based universities and six U.S. health institutions will be added beginning in the fall 2013 and four international universities in 2014 (www.edX.org/faq). The edX currently offers 26 courses while graduates can earn a certificate of completion, after successfully completing
a free, proctored exam, issued under the name of the providing university. More than 900 thousand have registered (Welsh & Dragusin, 2013).

edX constitutes one of the major breakthroughs in the are of MOOCs. Its global reach and the extensive range of courses and curricula formulates one of the most integrated and informed online courses platform.

3.4.3 Udacity

Udacity[5] is a private educational organization founded by Sebastian Thrun along with David Stavens, and Mike Sokolsky. Its mission is "to bring accessible, engaging, and effective higher education to the world; we believe that higher education is a basic human right, and we seek to empower our students to develop their skills in order to advance their careers" (www.udacity.com). There are to date 22 classes in four areas, including Business courses, offered for free online. Testing is available online (for free) or, face-to-face (for a fee). Upon completing a course, students receive a certificate of completion (sent by e-mail, as a PDF file) indicating their level of achievement, signed by the instructors, at no cost. Udacity claims to have had more than 160,000 students enrolled (Welsh & Dragusin, 2013). Udacity advantages involve World-class instructors, passionate and committed mentors, and instant access to the most up-to-date resources together with an advanced learning model that is flexible, adaptive, and ready when you are. At the same time, provides real-world experience, and showcase participants' skills in a compelling and informative way. Moreover, one of the advantages of Udactiy is the access provided in a wide community equipped with various disciplines.

3.4.4 Coursera

The online platform called "Coursera" (www.coursera.org) was initiated by two Stanford University professors, Daphne Koller and Andrew Ng, who founded a social entrepreneurship company in Mountain View, California with $22 million in venture funding, and quickly partnered with their university. Their aim is to make the best higher education available to as many people as possible, "Our mission is to teach the world and make higher education available for everyone" (Mitchell, 2012). The number of actual top universities joining the project is continuously rising, reaching 62 as of February, 2013. Twenty-seven of the 62 universities are international, encompassing 19 countries (www.coursera.org/#universities). Since Coursera's launch, more than three million people have signed up for one or more of the 329 offered courses (each with a definitive start date, and comprehension testing), in 24 categories, out of which three are EE related (details provided below), ranging from five to 12 weeks in length. English is the main language used (302 courses), but courses are now offered also in Spanish (11 courses), French (9 courses), Chinese (5 courses) and Italian (1 course) as of February, 2013. There is also a multiple language offerings open access

[5] www.udacity.com

to an even larger number of learners (www.coursera.org/#courses). Statements of accomplishment are issued upon graduation (Welsh & Dragusin, 2013). One of the breakthrough innovations of Coursera regards its partnering with top universities and organizations to offer courses online as long as with a wide network of mentors. In Coursera, mentors are a dedicated community of over 350 Coursera learners who foster discussion and support learners in more than 70 courses. Another innovation of Coursera is Beta testers whjoich constitute an impressive group of experts and enthusiasts who explore Coursera courses before they open to the public and give feedback to instructors.

3.4.5 EdCast

EdCast[6] is a knowledge network built to inspire, empower and educate individuals and organizations to get smarter with daily curated & contextual bite-size insights (SmartBitesTM) with live access to influencers and Subject Matter Experts. EdCast Knowledge NetworksTM powers social, mobile and cloud-based informal learning for world-class institutions, enterprises, governments and nonprofits to enable millions to become lifelong learners.

The EdCast executive team has a track record of building large-scale transformational technology; all are passionate about the global impact of mobile and online knowledge sharing. EdCast is a Stanford StartX company backed by tier one VC firms and advised by visionaries and globally renowned thought leaders, Mitch Kapor and Prof. Jeffrey Sachs.

The EdCast has launched a new interactive platform with the help of some media, technology and finance companies. The goal is nothing less than the transformation of learning through a blend of online classes (formal education) with bite-sized tutorials with real practitioners and specialists in certain fields (informal learning).

EdCast has partnered with hundreds of universities around the world to offer online classes, with a digital streaming component for bite-sized lessons to complement the classroom environment. According to its chief executive Karl Mehta "Luminaries like Jeffrey Sachs have brought their curricula online and corporations are also turning to the service for their own professional and continuing educational endeavors"[7], while "there is not a single social media site that's focused on knowledge networking". In this direction, EdCast launched The 10 Minute Insight series is free and open to any participants. Once a week, executives, political figures and celebrities make themselves available for an interactive lecture and Q&A with participants through the EdCast site.

A major innovation of EdCast regards the proviosn of a real time view of flow of expertise and knowledge across your teams helping the identification of most acknowledged, best connected, and influential team members. Moreover, another innovative element is the emphasis on 'tacit knowledge'. As it is mentioned, 'the most valuable content you have is the 'tacit' knowledge in the minds of experts'. In this way, EdCast can help participants' release this and build your own libraries of expert content with just the push of a button.

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[6] https://www.edcast.com/

[7] http://techcrunch.com/2015/09/15/edcast-launches-new-interactive-learning-platform-to-bridge-formal-and-informal-learning/

3.4.6 Khan Academy

Khan Academy is a non-profit educational organization created in 2006 by educator Salman "Sal" Khan with the aim of providing a "free, world-class education for anyone, anywhere". The organization produces short lectures in the form of YouTube videos. In addition to micro lectures, the organization's website features practice exercises and tools for educators. All resources are available for free to anyone around the world. The main language of the website is English, but the content is also available in other languages[8].

Khan Academy[9] offers practice exercises, instructional videos, and a personalized learning dashboard that empower learners to study at their own pace in and outside of the classroom. We tackle math, science, computer programming, history, art history, economics, and more. Our math missions guide learners from kindergarten to calculus using state-of-the-art, adaptive technology that identifies strengths and learning gaps. We've also partnered with institutions like NASA, The Museum of Modern Art, The California Academy of Sciences, and MIT to offer specialized content.

Khan Academy empowers coaches of all kinds to better understand what their children or students are up to and how best to help them. Kahn coach dashboard provides a summary of class performance as a whole as well as detailed student profiles.

3.4.7 MIT Launch X: Becoming an Entrepreneur

Becoming an Entrepreneur is an innovation and business course designed for young, aspiring entrepreneurs who want to explore an entrepreneurial path, and overcome some of the initial challenges in taking those first steps[10].

From developing new business ideas to market research to entrepreneurial strategy and pitching, this course follows MIT's successful approach to entrepreneurship. There will be a combination of short videos, thought-provoking case studies, and activities that will challenge you to get you away from your computer screen and into the community to make a real impact.

No previous business or entrepreneurship experience needed. The course is designed for high school and college students but learners of any age may enroll. The major outputs from the course include:

- Overcoming the top hurdles to starting a company
- Coming up with business ideas
- Performing market research and choosing your target customer
- Developing your positioning and entrepreneurial strategy
- Defining your goals as an entrepreneur and business, plus pitching and selling to customers.

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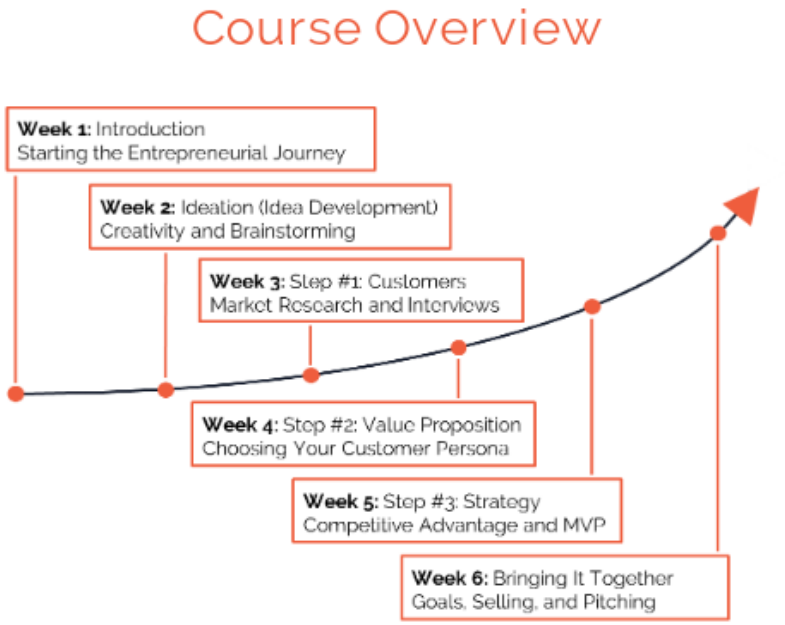
8 https://en.wikipedia.org/wiki/Khan_Academy

9 https://www.khanacademy.org/

10 https://www.edx.org/course/becoming-entrepreneur-mitx-launch-x-0



The major advantage of this course is that it provides knowledge and learning on business skills and startup mindset needed to embark on entrepreneurial paths from MIT's premier program for aspiring entrepreneurs, MIT Launch. The major impact of the course involves the development of positioning and entrepreneurial strategy as well as the definition of goals as an entrepreneur and business, plus pitching and selling to customers.

3.4.8 Digital Marketing Specialization - part of University of Illinois iMBA Program

This Specialization explores several aspects of the new digital marketing environment, including topics such as digital marketing analytics, search engine optimization, social media marketing, and 3D Printing. When you complete the Digital Marketing Specialization you will have a richer understanding of the foundations of the new digital marketing landscape and acquire a new set of stories, concepts, and tools to help you digitally create, distribute, promote and price products and services. The specialization includes the following five (5) courses:

1. Marketing in a Digital World (4 w, 6-8 h/w)
2. Digital Analytics for Marketing Professionals: Marketing Analytics in Theory (4 w, 8-10 h/w)
3. Digital Analytics for Marketing Professionals: Marketing Analytics in Practice (4 w, 8-10 h/w)
4. Digital Marketing Channels: The Landscape (4 w, 8-10 h/w)
5. Digital Marketing Channels: Planning (4 w, 8-10 h/w)
6. Digital Marketing Capstone (6 w, 5-7 h/w)

Week 1:

- 13 videos ~ 88 min
- readings
- Quiz

- Assignments (30min/each)
- 3 Peer Review Assignments (30min/each)

(Source: https://www.coursera.org/specializations/digital-marketing)

A major innovative element of this programme is that provide deep knowledge in courses with impact on business development such as Marketing in a Digital World which provides the opportunity to learn the introductory theory and strategy behind marketing analytics as long as it provides marketers with the foundation needed to apply data analytics to real-world challenges they confront daily in their professional lives.

3.4.9 Platform Revolution: Making Networked Markets Work for You

Dates: Jun 20-Jul 18, 2016

NEW ONLINE PROGRAM in collaboration with the MIT Initiative on the Digital Economy (IDE)[11]

The two-sided networked market is one of the most important economic and social developments of our time. What companies and industries are most affected by these platform approaches? Why is the change to network markets happening now? And, what can your company do to adapt and thrive? This digital, four-week program is designed for managers, executives, investors, and entrepreneurs interested in creating, managing, or understanding business platforms.

Platform Revolution: Making Networked Markets Work for You (online) is a new, four-week program that introduces participants to the many ways networked markets are transforming the economy and provides strategies for designing, monetizing, and launching a digital platform. Combining rigorous theory with real-world experience, this program is presented as a digital toolkit of weekly live webinars, recorded video lessons, presentations, and exercises released weekly that you can access however and wherever works best for you. Topics include platform startup, converting existing businesses, openness, network effects, innovation, cannibalization, pricing, governance, and competition.

Each week of the program will approach the platform revolution from a unique angle. Program modules and webinars will emphasize practical approaches and draw from social media, healthcare, entrepreneurship, enterprise software, mobile services, and consumer products to provide foundations and definitions. This course will also demonstrate established economic principles from the literature on industrial organization, two-sided network effects, information asymmetry, pricing, and game theory.

This innovative program is taught by Geoffrey Parker, Research Fellow at MIT Sloan and the Initiative on the Digital Economy (IDE) at MIT. The MIT Initiative on the Digital Economy (IDE) explores how people and businesses will work, interact, and prosper in an era of profound digital transformation. We are increasing knowledge and expanding the dialogue on the digital economy through executive education.

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[11] http://executive.mit.edu/openenrollment/program/platform-revolution-making-networked-markets-work-for-you/#.V0VC8fmLTs1

The Platform Revolution program was developed by MIT IDE Research Scientist Geoffrey G. Parker, who co-authored the recent book Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You with Boston University Professor Marshall Van Alstyne and Sangeet Paul Choudary. Geoffrey delivers this eight-hour online course, which will provide individuals and organizations with the insights, frameworks, and knowledge to build their individual platform capability—or to thrive within another organization's platform ecosystem.

The major advantage of this course is that it provides, for a first time, a complete map and guide for designing and implementing a business model and strategy for platform business. The specific course fulfils a gap in the current literature and practice by providing in-depth knowledge and information to participants on the major components of an efficient platform business model in the new era of digital economy.

3.4.10 Digital Business Academy

Digital Business Academy[12] has been created by Tech City UK in partnership with leading educational institutions, businesses and organisations, to offer the business skills needed to succeed in a digital world.

Digital Business Academy offers eleven online courses, designed by experts and free to participants. You don't need any qualifications to do the courses. The content is designed for anyone aged 18 and over. Courses are delivered by UCL, Cambridge Judge Business School, Founder Centric, and Valuable Content, and cover a range of essential business skills to help you start, grow or join a digital business. The eleven free online digital business courses have been designed to be complementary, and together they cover off the key commercial skills needed to either start, run or join a digital business.

Digital Business Academy offers insights into essential areas, including:

- When and how to start a digital business
- Developing digital products
- Marketing and branding
- Digital marketing campaigns
- Finance for start-ups

On finishing the courses, one can apply for career-enhancing rewards and opportunities offered by industry partners in recognition of the skills gained. The Digital Business Academy platform is powered by UCL and encourages colleges, universities or any other educational institutions to pick, choose and suggest courses to students as a supplementary activity.

Courses:

- Course 1: Size up your idea
- Course 2: Set up a digital business
- Course 3: Develop and Manage a Digital Product

[12] http://www.digitalbusinessacademyuk.com/

- Course 4: Make a marketing plan
- Course 5: Build a brand
- Course 6: Understand Digital Marketing Channels
- Course 7: Run a digital marketing campaign
- Course 8: Master finance for your business
- Course 9: How to track performance in early stage startups
- Course 10: How to Manage Customers
- Course 11: How to use social media for business

Digital Business Academy's free courses aim to equip students with valuable digital business skills. Each of our courses are run with online learning groups twice a year, giving students access to a live educator for online discussions and Q&A at selected times.

Moreover, Digital Business Academy aims to offer its courses to start-ups or a large corporations. Academy's expert digital business courses can equip business workforce with skills that will put your business ahead of the competition. Digital Business Academy world-class courses will equip employees with specialist skills, enhance their understanding of digital business, and help them develop and entrepreneurial mindset. All our courses are online and ready to go, and available for you to either integrate into your learning and development programmes as compulsory modules, or to promote to employees as a supplementary activity.

Digital Business Academy has launched as a pilot, and for now is available only to those in the UK. Once the pilot has proved successful, it will be opening up Digital Business Academy to participants internationally. The crucial element of Digital Business Academy is its special focus and expertise on digital learning modules. In this respect, Digital Business Academy world-class courses equip employees with specialist skills, enhance their understanding of digital business, and help them develop and entrepreneurial mindset. Backed by well-renowned institutions, Digital Business Academy provides sound knowledge and information on all relevant issues with emphasis at the commercialisation of innovative ventures.

3.4.11 LearnWorlds

LearnWorlds offers an e-learning a platform focused on learners needs, a product that offers beautiful and holistic worlds of learning, learning ecologies. LearnWorlds targets instructors and organizations with premium content who want to sell their courses in premium prices or share it within their walls. LearnWorlds offers an easy, hassle-free way to create their own, personally branded, online schools.

Existing platforms like Udemy are selling more and more courses for cheaper and cheaper prices or even give them out for free. These platforms operate as "learning supermarkets". And the number of products in their shelves is growing daily at an exponential rate. In this market it is important for trainers or organizations with a strong brand name and premium content to differentiate.

LearnWorlds[13] employs fresh and innovative content delivery methods. For example, where others offer a simple video player, LearnWorlds offers an interactive video experience. But it is not just about the content delivery. LearnWorlds integrates a wide spectrum of learning tools such: social networking for being connected, daily newspaper for being informed, gamification engine for being motivated and a lot more. Trainers can now offer, not just courses, but WORLDs of learning[14].

More innovative elements include the creation of courses once and make them instantly available to all tablets and mobile phones along with a growing set of available languages (or creation of own translations) through the customization of the wording of every label to match the vocabulary of differentiated audience. In this respect, customized notuification are available through the development of relationships and trust with participants using customized welcome and course completion emails.

3.4.12 MyeTutor

eLearning Industries Ltd. is an EdTech company that is developing a subscription based eLearning platform "MyeTutor.org" that enables high school students to attend an after school tutoring class from any-place-time-device, helps them learn better/faster than in a conventional class and thus succeed in the their exams. It personalizes education built with the help of advanced algorithms around their learning and knowledge profiles and with study material adjusted in real time to their progress[15].

The problem is attempting to tackle is to improve education as we know it, and the way it is delivered in schools, which has marginally changed since the time of the industrial revolution. However the demand for highly skilled workforce has increased substantially leaving in the middle highly stressed students competing for a better future. Inefficient education results in students failing to learn the right way, thus failing in their exams costing them time, money and lost opportunities.

The innovative of the platform MyeTutor.org involve elements which enable high school students to attend an after school tutoring class from any-place-time-device, helps them learn better and faster than in a conventional class and thus succeed in the their exams. Moreover, it personalizes education built with the help of advanced algorithms around their learning and knowledge profiles and with study material adjusted in real time to their progress. It utilizes live tutors together with advanced knowledge engines to identify and fill knowledge gaps. The major advantage regards the focus in improving the way education is performed and knowledge in transferred to students by providing a personalized educational delivery platform to their learning profiles and real time adaptive content to their progress that becomes a vital part of their educational experience.

3.4.13 WithGoogle Digital Training initiative

Based on official data of the European Commission according to which in the near future 90 percent of jobs will require digital knowledge, Google has launched a series of initiatives in the European continent aiming at helping SMEs acquire digital skills and grow faster. WithGoogle digital initiatives around EU countries have

[13] https://www.learnworlds.com/
[14] http://www.mitefgreece.org/learnworlds-internet-web/
[15] http://www.mitefgreece.org/elearning-industries-ltd-myetutor-org-internet-web/

committed to provide digital skills training, combining both online and in person at pop-up training venues. Depending on the country digital skills may be associated with a particular sector or a more general spectrum of digital marketing and management skills[16].

In this line, from Google's online platform potential and existing entrepreneurs can receive both online but also personalised training on how to use Google's existing tools and services in addressing the challenges they face when they run their business. For instance, identifying 'the online opportunity', learning how to successfully 'search' the internet, exploit 'business analytics' and 'social networks', build 'an online shop' and 'expand in new markets' are training modules offered by Google. Although, this specific initiative is oriented towards helping actual business people cope with challenges, it also provides students the opportunity to be certified by Google in digital marketing following the relevant modules which are open and available. In addition, Google provides a wide array of tools that help micro and small business owners' boost their performance and specifically:

- Online presence tools
- Marketing and Advertising tools
- Local and Social tools
- Analytics tools
- E-commerce tools

WithGoogle constitutes an innovative initiative on its own since it provides an integrated set of knowledge and skills in crucial areas with the aim to support actual business people cope with current challenges.

3.4.14 OpenUpEd

OpenupEd[17] is a pan-European initiative around MOOCs. . OpenupEd is the first, and, thus far, the only pan-European MOOC initiative. It was launched in April 2013 by EADTU in collaboration with the European Commission. In 2013 partners from 16 European countries have joined forces to launch the first pan-European 'MOOCs' initiative, with the support of the European Commission. More than 200 courses, covering a wide variety of subjects, are available free of charge and in several different languages. The initiative is led by the European Association of Distance Teaching Universities (EADTU) and mostly involves open universities. The partners are based in the following countries: Canada, Cyprus, Germany, Greece, France, Italy, Lithuania, the Netherlands, Portugal, Slovakia, Spain, UK, Russia, Turkey and Israel.

Courses range from mathematics to economics, e-skills to e-commerce, climate change to cultural heritage, corporate social responsibility to the modern Middle East, and language learning to writing fiction. Each partner country is offering courses via its own learning platform and at least in its home language. The current choice is from the 12 languages of the partners, plus Arabic.

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[16] For instance, in the Greek case Google's digital initiative scheme focuses on the services sector and specifically tourism (for details see https://greektourism.withgoogle.com/) whereas in the case of the UK, Google's initiative targets a wider variety of marketing and management related digital skills (for details see https://digitalgarage.withgoogle.com/)

[17] http://www.openuped.eu/

Some of the innovative elements of this initiative include:

- online courses designed for large numbers of participants,
- that can be accessed by anyone anywhere as long as they have an internet connection,
- are open to everyone without entry qualifications,
- and offer a full/complete course experience online for free

OpenupEd aims to be a distinct quality brand embracing a wide diversity of (institutional) approaches to open up education via the use of MOOCs. Courses can be taken either in a scheduled period of time or anytime at the student's own pace. They typically involve from 20 to 200 hours of study. All courses may lead to recognition: a completion certificate, a so-called badge, or a credit certificate that may count towards a degree. In the latter case, students have to pay for the certificate, with the cost ranging from € 25 to € 400, depending on the course size (the hours of study involved) and institution.

Another innovative element of the approach is that OpenupEd partners agreed to develop a quality label for MOOCs tailored to both e-learning and open education (label was published in January 2014). The associated institutional benchmarking with this label is primarily meant to be applied as an improvement tool. This tool compares institutional performances with current best practices and leading to measures to raise the quality of its MOOCs and their operation. As a result, this process is designed to complement both an institutional course approval process, and ongoing evaluation and monitoring of courses in presentation[18].

3.5 Conclusion - summary of overall learning points

The aim of the present report was to provide a short overview on best practices putting the idea of "entrepreneurship" into theory and practice through platform and online learning approaches. As mentioned above, action-based learning constitutes a rather complex approach although with strong elements of efficiency. Especially, as regards to entrepreneurial education action-based learning enhances the diffusion and communication qualities of the educational content. Entrepreneurial education aims to develop some level of entrepreneurial competencies which are defined mostly as knowledge, skills and attitudes that affect the willingness and ability to perform the entrepreneurial job of new value creation (Lackeus, 2015). In this prism, the design of entrepreneurial courses should take into account and encapsulate elements promoting interaction and active learning.

Additionally, based on the cases presented, it is worth noting that the design and the implementation of online courses necessitate a dexterous and well-founded design approach. Specifically, designing an online entrepreneurship course has to address the special features of action, value creation, team-work and interaction with the outside real world (Lackéus, 2015). The approach adopted within this report attempts to address the crucial issues related to an interactive learning and teaching process. This approach requires a

[18] http://www.openuped.eu/quality-label

great deal of detailed and careful planning and guidance throughout the learning and teaching process. Thus, the design of an online course is more demanding but cumulatively and exponentially increases the pedagogical opportunities and the educational impact. Consequently, action-based learning and the active engagement of the participants should be a part of the design elements for future entrepreneurial education courses and this approach is adopted as suggested course of action for the present project.

As a short summary of overall learning points from the cases examined, one could underline specific common points characterize most of them. More specifically, many of those cases are backed by well-renowned academic and research institutions which is a fact denotes the significance of specialized knowledge inputs for the launch and sustaining of value added educational e-tools. Nowadays, the capacity to incorporate specialized knowledge produced in a fast-pace is a crucial parameter for designing a well-informed educational material. This is the second element and learning point from the cases examined, that is their capacity to encompass updated knowledge inputs on a constant basis and to provide well-informed and ground-breaking knowledge modules within a framework of an economy driven by fast-paced technological change. Last but not least, all relevant modules, contents and issues elaborated in the cases examined put a special emphasis, explicitly or implicitly, at the commercialisation or exploitation of innovative ideas, ventures or business vehicles as long as with the significance of open exchange of knowledge resources amongst knowledge exploration and knowledge exploitation communities (e.g., Universities and users). Overall, it is obvious that the launch and evolution of the cases such as the ones examined in this section triggers a self-perpetuating spiral of innovation that produced an epic shift in the educational models and patterns, which may be just the beginning of the 'future of education'.

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4 E-course structure & Lesson Plans

Prepared by Dr. Victoria Daskalou and Dr. Margarita Komninou, Department of Economics, University of Patras

4.1 Introduction

The aim of the OpEn course is to ***motivate, inspire and engage*** prospective young entrepreneurs and existing small firms to launch digital business. The course structure is based on the results of the Intellectual Output 1 "Skill profile identification" of the OpEn project, where the consortium, after a training needs analysis, has identified aspects of the training gap between required and existing competences (knowledge, skills, and attitudes) of prospective and existing young entrepreneurs who seek for today's business solutions, and especially for those who wish to exploit entrepreneurial opportunities into the digital world.

The course structure reflects also the limitations implied by the abilities, the scientific background as well as the budget allocated to each member of the consortium for the development of Open Educational Resources, a task which will be accomplished in Intellectual Output 3. An overview of the course structure (areas of focus and corresponding required study effort in weeks), illustrating the obligation of the Erasmus+ program for the development of Open Educational Resources (Open Education) and the use of open tools is presented below in Figure 4-1.

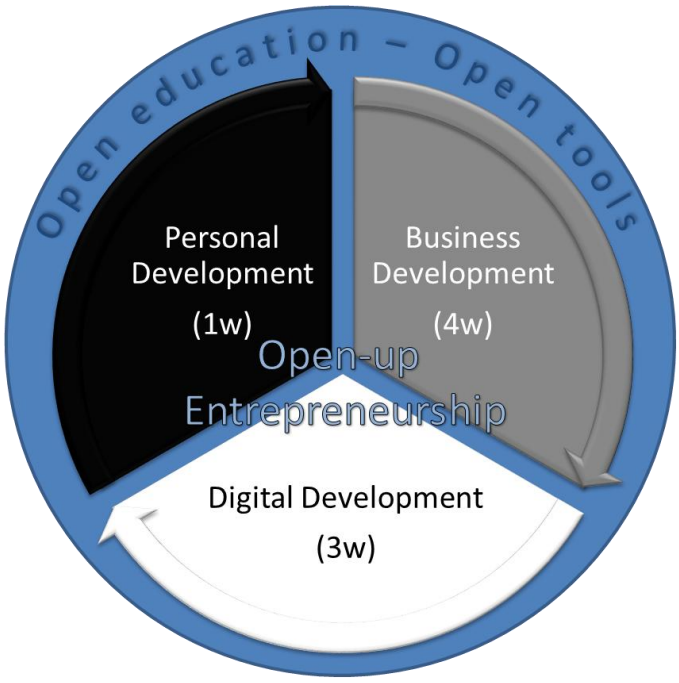

Figure 4-1: The OpEn course main sections

The OpEn course consists of three (3) sections:

1. The **Business development** section, which focuses on fundamental and essential concepts within business management

2. The **Personal development** section, which focuses on the personal development of young entrepreneurs
3. The **Digital development** section, which focuses on digital competences of young entrepreneurs

Each section will be treated as a separate course on the OpEn online platform having each own syllabus, structure, content, educational material, etc. This decision of the consortium reflects the requirements that have been identified in the target audience; participants could be people of different educational or disciplinary background, and thus, should be given the flexibility to choose the focus of their learning according to their needs. For example, a participant, who is an alumnus of a business school, would probably be familiar with the skills and competences covered in the Business Development section of OpEn course and choose to enroll only in the Digital Development one. This feature of the OpEn online course gives each participant the freedom to build an online curriculum customized to its own personal needs.

During this phase of the project, the OpEn educators developed the course syllabus and designed the online course unit plans using common templates and examples following the pedagogical approach explained in Chapter 2. This chapter begins with a brief explanation of the components of each template (one for the Syllabus and one for the Course-unit Plans). The OpEn e-course syllabus and an overview of each online Course-unit Plan is presented next. Due to their extended format, the detailed course Syllabi and Course unit Plans are presented as Appendices [see Appendix I: Course Syllabi (p.65-79) and Appendix II: Course Plans for the extended version of each course-unit plan (p.80-104)].

4.2 The e-course structure

As already stated, the OpEn course is divided in three (3) **Sections** representing the main three areas of focus – business, personal and digital. Each of these Sections is composed of **Course Units**, which are further subdivided in **Thematic Units** (resulting in a total of 5 course units and 15 thematic units for the whole course).

The total duration of the course is 8 weeks. A week of the OpEn course equals to four (4) hours of study for the participant. Table 4-1 illustrates the final structure of the course, along with information on duration (and distribution of responsibility for each thematic unit among partners). The duration and the nature of learning activities for each thematic unit is under the responsibility of the educator in charge for the thematic unit.

Section A: Business Development [4 weeks]	
Course Unit 1. Understanding Business and Entrepreneurship [3 weeks]	
Thematic Unit 1: Intro to management and strategy	MMU
Thematic Unit 2: Intro to marketing	IME GSEVEE
Thematic Unit 3: Innovation and entrepreneurship	IME GSEVEE,

	MMU
Course Unit 2. Understanding your consumer **[1 week]**	
Thematic Unit 4: Consumer behavior	UPAT
Thematic Unit 5: Market research	UPAT
Section B: Personal Development [1 week]	
Course Unit 3. Developing your personal skills **[1 week]**	
Thematic Unit 6: Leadership and empowerment	CEEI-Burgos
Thematic Unit 7: Negotiating skills	CEEI-Burgos
Thematic Unit 8: Networking skills	CEEI-Burgos
Thematic Unit 9: Collaborating skills (team working, communicating, establishing partnerships)	CEEI-Burgos
Section C: Digital Development [3 weeks]	
Course Unit 4. Understanding key digital technologies **[1 week]**	
Thematic Unit 10: Web technologies and Content Management Systems	UNIBA
Thematic Unit 11: Agile methods for software development	UNIBA
Course Unit 5. Digital Tools for Sales and Marketing **[2 weeks]**	
Thematic Unit 12: Digital entrepreneurship and applications	UPAT
Thematic Unit 13: Digital tools for marketing	
Thematic Unit 14: Online sales	UPAT
Thematic Unit 15: Social media and collaborative tools: Deployment and Analytics	UPAT

Table 4-1: The final structure of the OpEn course

4.3 Syllabi

4.3.1 E-course Syllabus Structure

The e-course syllabus offers a synopsis of the course and its aims. The structure of this syllabus, i.e. the parts that this syllabus should contain, is based on a common template that was prepared and circulated among partners. The OpEn e-course syllabi are working documents which the consortium is continuously improving during the Activity 2 of the project. The e-course syllabus consists of the following main parts:

- Course Title
- Instructors (photo, affiliation, short cv, personal page)
- Course Overview / Description /Synopsis
- Course Contents (Syllabus)
- Course Objectives/Goals
- Keywords
- Bibliography (Bibliography, Online readings, Sources on the Internet, Other relevant open courses, Articles, Films)
- Instructional methods (teaching and learning methods used)
- Assessment methods (description of evaluation methods and evaluation criteria used)
- Prerequisites/Prior knowledge (general prerequisites and possible preparation for completion of the course, prerequisite courses codes and links)
- Textbooks

The following sections offer an example of the course overview, content and objectives as described in the working syllabus for each of the three course Sections. The complete course Syllabus forms for each course Section can be found in Appendix I: Course Syllabi (p. 65-79).

4.3.2 Business Development course syllabus

- **Course Overview / Description /Synopsis**

The course provides a comprehensive overview of fundamental and essential concepts within business management. It introduces and enables participants to employ tools for effective strategic analysis, marketing planning and the management of innovation and new product development.

- **Course Contents (Syllabus)**
  - Strategic management in dynamic and changing environments
  - Strategic marketing management: understanding consumer behavior and undertaking market research. Developing an effective brand and managing relations with sale and distribution channels.
  - Managing the innovation process, new product and service development and business model innovation.
- **Course Objectives/Goals**

After the completion of the course you will be able to appreciate the full extent of processes and operations that are required for developing and managing a sustainable business proposition that will satisfy changing

consumer requirements and provide sustainable competitive advantage in changing external environments. Specifically, the course will assist participants in developing the necessary skills to manage the processes involved in developing new products, services and business models that can meet new market trends and evolving consumer requirements. Participants will appreciate the processes, practices and tools for analyzing the forces of change in the external industry and macro environments, to evaluate alternative positioning strategies, the processes underpinning effective brand development and building and maintaining distribution channels.

4.3.3 Personal Development course syllabus

- **Course Overview / Description /Synopsis**

The course is focused on the personal development of young entrepreneurs. It shows and describes basic personal skills included in the individual learning process in order to achieve essential capabilities required to start up and manage any enterprise.

- **Course Contents (Syllabus)**

The course is split in four parts as follows:

- Leadership and empowerment: Understanding the role of the entrepreneur in the company. Participants create leading thoughts for themselves and their organizations/start-ups/companies, based on which they will manage and steer them.
- Negotiation skills: Learning dialogical methods by which people settle differences as a process by which an agreement is reached avoiding argument or dispute.
- Networking skills: Improving networking capabilities as one of the most important skills for entrepreneurs. In the process of potential customers detection, it is essential to understand their needs and assess whether our company could offer them any valuable solution. This process includes building and maintaining relations with the appropriate people.
- Collaborating skills (Team working, communicating, establishing partnerships): Achieving dialogical competences and understanding community learning and working inspiring individuals start to commit themselves to learn and work together. Delving deeper in customer relationships in cooperation with customers.

- **Course Objectives/Goals**

This course unit will raise awareness on the importance of personal development skills related to management and business in the process of starting up a company in the participant/entrepreneur mindset.

After the optimal completion of this course unit the participant will be able to:

- Understand and learn leadership and empowerment fundamentals.
- Understand and learn essential negotiation skills.
- Understand and improve his/her networking skills.
- Understand and improve his/her collaboration skills.
- Apply these skills to actual business/entrepreneurship environment.
- Adapt these skills to his/her actual entrepreneurship project.

4.3.4 Digital Development course syllabus

- **Course Overview / Description /Synopsis**

The course focus on the digital development of young entrepreneurs. It explains the fundamental issues of the Internet and related computer and communication technologies and presents how young people could adopt digital technologies to create and run today's enterprises.

- **Course Contents (Syllabus)**

The first part of the course addresses fundamental issues of the Internet technology. Initially explains the characteristics of the WWW and demonstrates information systems that are used for presenting and managing content on the web. Then it presents new methods for developing software for today's enterprises and explains in more detail the agile methodology.

The second part of the course discuss digital entrepreneurship by presenting cases of existing young entrepreneurs who exploited Internet technologies and business applications to build and operate today's firms. The course demonstrates the use of digital tools for sales and marketing in every-day business examples, with emphasis to free and open tools, content and data.

- **Course Objectives/Goals**

At the end of this course unit young, existing or prospective entrepreneurs, will be able to:

- Understand fundamental issues of the Internet technology
- Understand basic characteristics of the WWW operation
- Use Content Management Systems
- Understand the agile methodology for software development
- Understand what is digital entrepreneurship
- Recognize how to exploit digital technologies in order to build and operate a micro-firm
- Use open and low-cost digital tools in simple business tasks
- Adopt digital technologies for sales and marketing purposes

4.4 E-Course Unit (lesson) plans

Each e-Course is divided in Course Units, which constitute semi-autonomous educational areas. Each partner that had the responsibility of a specific course-unit prepared its predefined structure by completing a specific template, called the Course-unit (lesson) Plan form.

The Course-unit (lesson) Plan forms included information about:

1. The *Scope* of the course-unit
2. The *Learning Objectives* of the course-unit in terms of:
    - Knowledge (what participants should know and understand by the time the course-unit is completed) using verbs such as understand, recognize, explain, etc.
    - Skills (what participants should be able to do by the time the course-unit is completed) using verbs such as use, develop, construct, create, apply, accomplish, perform, produce
    - Attitudes (what the participants' opinions will be about the subject matter of the course-unit by the time it is completed) using verbs such as consider, exemplify, plan, realize, reflect, revise
3. The *Thematic units*, including:

- The *duration* (estimated according to the required participant's time) and the lesson structure, i.e.
- The *online Learning Activities* that participants should undertake during this thematic unit.

The presentation of each online Learning Activity was implemented using the form presented in Table 4-2 (see below). The majority of the columns are self-explained, while more information was provided for the following columns:

- Technique: Lecture, Demonstration, Practice, Storytelling, Assignment, Case-study, Brainstorming, Discussion, Team-work, Individual-work. For an indicative list of educational techniques see paragraph 2.7.1.2
- Eclass tool: Video, Documents, Exercises (quiz), Forum, Blog, Groups, Links, Questionnaire, etc. For an indicative list of e-class tools see paragraph 5.4 and the guide at Appendix V: Eclass instructions for trainers
- Format of open material: Video file, Slides in pdf, Spreadsheet, Text, etc in open formats. For a list of open formats see https://en.wikipedia.org/wiki/Open_format#Examples_of_open_formats

Description of Participant's activity	Learning Objective	Technique	Eclass tool	Format of open material	Assessment	Preparation actions for educator	Original Language	Transcripts

Table 4-2: Form used for describing the lesson structure as a list of online Learning Activities

The completed forms of the (lesson) Plans for each Course Unit can be found in Appendix II: Course Plans (p.80-104).

4.5 Conclusions

The e-course syllabi have been specified as working documents which the consortium will continuously improve throughout the process of creating the educational material and un till the end of Activity 2. The course duration, structure as well as the provisional online learning activities were designed in a way to serve this project's aim and objectives.

Figure 4 2 (see next page) illustrates the way in which the final OpEn course structure (as presented earlier) will be adapted to the requirements of our Learning Management System (LMS) structure. The three (3) main course ***Sections*** *(Business, Personal and Digital Development)* ***will form three (3) separate online courses*** in the LMS (illustrated in green). Subsequently, ***the Course Units will form eight (8) e-course units*** at the LMS (illustrated in purple). Since the "eclass" LMS does not have a structure for the representation of ***thematic units (illustrated in blue), these will be presented as a list of learning activities***. Each learning activity will form a learning path of different eLearning modules in the LMS.

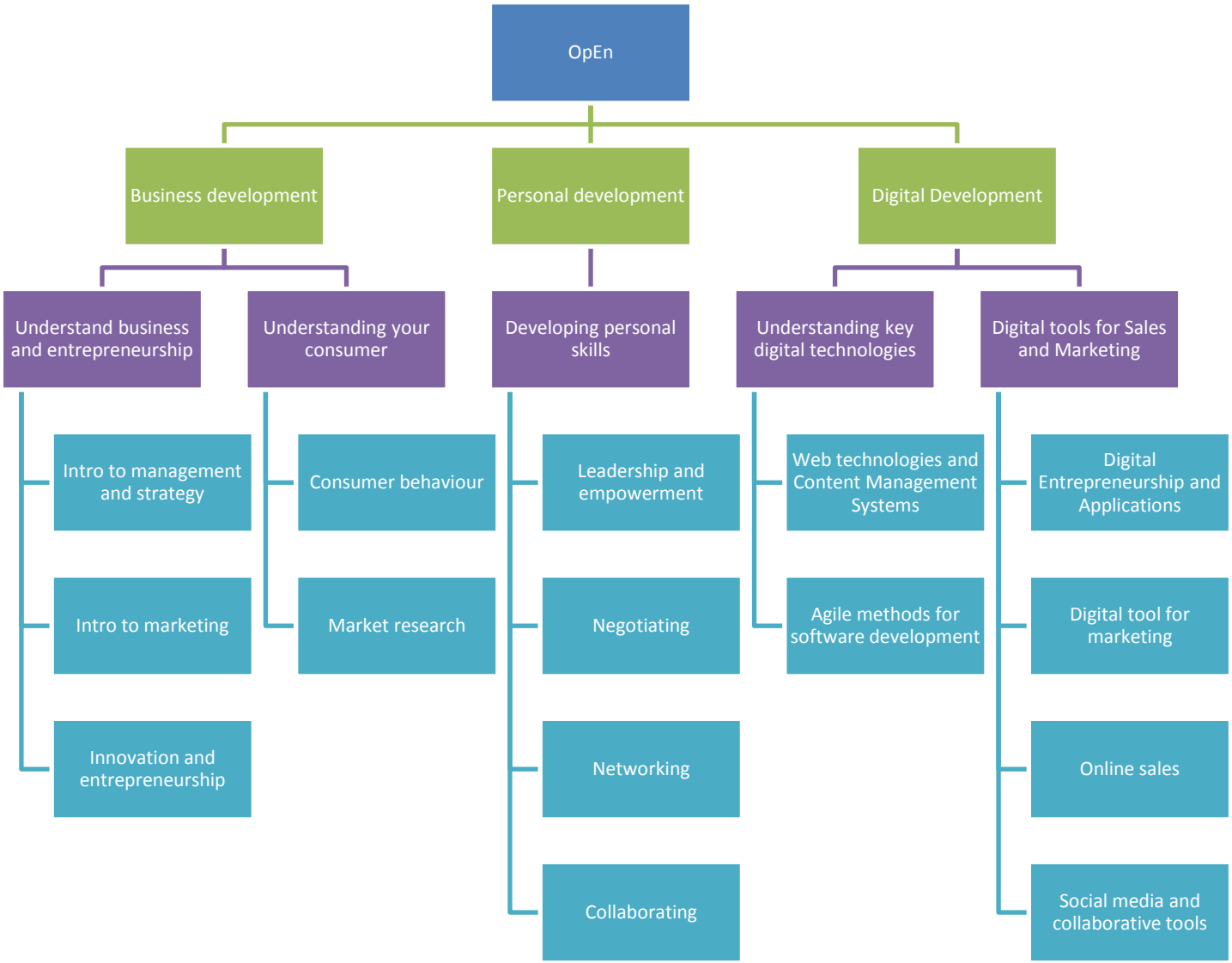

Figure 4-2: The Learning Management System (LMS) structure of the OpEn course

5 Implementation issues

Prepared by Prof. Nikos Avouris, Olga Georgiadou and Aristeidis Koutoulogenis, Media & Learning Technologies Centre, University of Patras

5.1 Introduction

In this chapter, we outline the technologies the project is using for supporting the implementation of courses and their course units which have been discussed in the previous chapter. A key constraint informing this decision has been the background competences of the key project partners. As described in the project technical annex and plan of work, the partner responsible for providing the technological infrastructure for supporting developing, for hosting and for publishing the online courses is the University of Patras, Learning Technology & Media Centre. This is a unit of the University that has supported the development of open online courses in recent years. The Center participates in an award winning open online courses national repository[19]. The learning content management system used by the Center is the open source online e-learning platform Open eclass (http://www.openeclass.org/en/).

Over 2.5K courses are hosted by the University's institutional platform to support undergraduate and graduate courses, with a user population of over 45K students. Thus, based on the experience of the University of Patras unit in developing open online courses, the project opted for adopting this platform for the OpEn courses.

In the following sections, we describe the main characteristics of this platform along with the key functionality of the platform that is going to be used for the development of the OpEn courses.

5.2 Distance learning platform

Open E-class is an open source, free, e-learning platform developed in 2003 by the Greek University Network (GUNet), a consortium of Greek Universities[20]. Most higher education institutions in Greece have adopted this platform for their e-learning services. There are many alternative tools offered for course designers of an eclass course, examples are modules for storing of documents, videos, eBooks, and other learning content, structuring the content in the form of learning paths, units, or in a weekly basis, creating self-assessment exercises, module for announcing and collecting homework, using communication tools, like delivering announcements to the students and other options that can be used to organize a course. Given the versatility and openness of the platform and the prior experience of the partner responsible for setting

[19] The Learnign Technologies Center of the University of Patras is a key partner and contributor to the opencourses.gr platform that won the Open Educational Consortium OE 2016 award, see more details in http://www.oeconsortium.org/projects/open-education-awards-for-excellence/2016-winners-of-oe-awards/2016-oe-award-winners-projects/

[20] Currently version 3.4 of Open Eclass is the one that has been used for this project.

up the project's learning platform in using it, it was decided during the project proposal phase to use this technology for hosting the courses developed in the project.

Since that decision, a new installation of the platform has been created however, because the existing installation (eclass.upatras.gr) has different settings than those required by the project, i. e. the default language was Greek and authorization of the user was achieved through the institutional user authorization service. This new installation can be reached at http://openup.upatras.gr/ .

The typical scenario of use of this platform in the case of OpEn is the following: the new students (existing and prospective young entrepreneurs) sign up to the platform by filling an online form with their First and Last name, a desired username and password and their email address. They can then select the courses they wish to enroll in.

The teachers who are interested in creating and managing a course, can apply for a new teacher account by following the same simple steps. Their application, however, needs to be confirmed by an administrator. In the case of OpEn, teacher accounts have already been created and teachers participating in the OpEn project have been provided with their credentials and instructions on how to sign in to the platform.

With respect to access in individual courses, the eClass platform provides four choices: a) open courses that do not require registration, b) open courses requiring registration, c) closed courses, where only registered users can attend, and d) inactive courses that are not visible to the public. The access pattern for an eCourse is defined by the teacher in charge during the creation of the course; it can be changed later on, however, through the eCourse administration tool.

Given the nature of the project, the OpEn courses are expected to be publicly accessible. Thus, the consortium should decide at some point soon whether participants will be required to sign up to the platform by creating a user account or not.

5.3 Media platform

Another issue to be taken care of was the setting up of a media server, since the online courses are expected to be demanding in terms of media.

There are various options for handling video and other media. The distance learning platform which was implemented for the needs of the project supports video uploading to the institutional video server, delos.upatras.gr. This is a video editing, video storing and video playing platform that is based on opendelos technology, an open source project developed by GUNet[21]. This will be made available to course developers.

In addition, we created a YouTube channel for the project called "Open Up Upatras" channel[22], in order to take advantage of the high performance of this popular platform. Course creators can upload videos to this channel, and insert them in their courses, available for all prospective young entrepreneurs. YouTube offers its users the ability to embed videos in any site, so by using the embedded code of the uploaded videos in order to show the videos on the elearning platform, the possibilities of encountering problems with add-ons

[21] http://opendelos.org/
[22] https://www.youtube.com/channel/UCdSIUG0uAhNOd_5SaJ1NWKA

missing from a students' browser or incompatible media players' versions are limited. In addition, YouTube supports subtitling and editing of videos.

The first podcast (created by MMU) has already been uploaded on this YouTube Channel. The Center has offered guidance to the instructor about how to use the embedded code in the OpEn Learning Platform.

5.4 Creating a new OpEn course

The process of creating a new OpEn course is described in this section. This is based on the available tools and modules in the open eclass platform that is going to be used as the main tool in the process.

5.4.1 Introductory text / course description

First the course objectives and target audience has to be defined and explained in a short introductory text. This is important information, as based on this, the trainers will decide if the course is relevant to their needs and worth following. A short introductory video and/or images may be included in this introduction. Information, like the pre-requisite skills and knowledge, delivery language, required effort and length need to be included. The introductory text is the brand of the course, and therefore should deliver a clear message on its character and objectives.

This introductory text should clearly describe what is the course referring to and its objective often accompanied from a short relative video or photo are enough to capture audience's attention. It is also recommended and very common in existing online platforms that the instructors prepare a small video introducing themselves to the participants, giving them the feeling that they are close to them, ready to answer to all their questions through the carefully designed and prepared course.

Open eClass offers a relative module for the description of the online course, which can be used to describe the contents and objectives of the course. An example is presented in Figure 5-1.

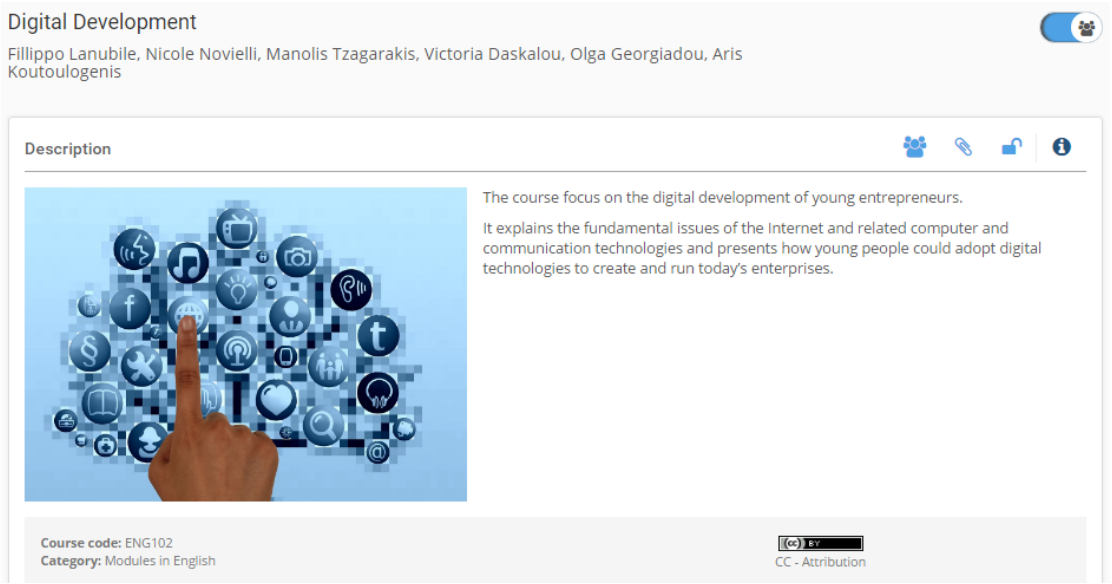

Figure 5-1: An example of the online course description

After the main course description, instructors can also present themselves, most preferably through a video describing their background, making participants feel like they already know them. An example of educator welcome message using animation video is presented in Figure 5-2.

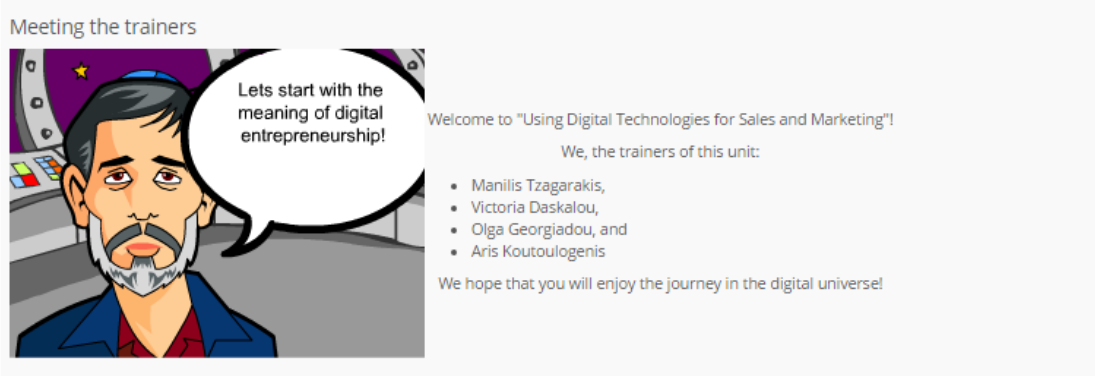

Figure 5-2: An example of educator welcome message using animation video

5.4.2 Metadata Information

Open Eclass conforms to the SCORM metada model, so there is need to describe the course through metada. Course developers are advised on this issue, by instructions on how to produce metadata information that they would need, to insert in the elearning platform in order to provide a complete description of their course. The metadata information included:

- course information,
- Information about topics / course sections,
- Information about thematic units
- Information about the Organization who produced the course

The metadata information is described in the guideline file that was created, to be found in the appendices of this report.

5.4.3 Course structuring

The next step for the course developer - after the introduction of the participant to the course - is to structure the content in short manageable Course Units. The Course units should follow a sequence that builds skills, knowledge and competences of the students. A thorough analysis of the collected course material should be made in order to organize the course and the course activities. The topics to be covered should be structured in subtopics and organized in independent units. The course units should make evident the course sequence to the students.

Each Unit may consist of:

- A short paragraph with the description of its contents and objectives and/or a short video explaining the participants the basic concept of the unit,
- the unit's learning objectives - what they are expected to learn from it - and what they will be able to do after completing it,
- learning content (a number of short videos describing concepts or a case scenario that will be used later on in practical work, ideas for projects to work on, etc.)
- activities (self-assessment exercises) based on the videos.

- course handouts and lecture notes often presented through slides
- extra material and links to resources for additional reading

It is important that every unit consists of learning items following a typical sequence as described above. The Open eClass platform was designed and implemented in a way to support this kind of sequence of learning activities, through the module called learning path. Instructions to educators for creating learning paths is included in a mini trainer guide presented in Appendix V: Eclass instructions for trainers.

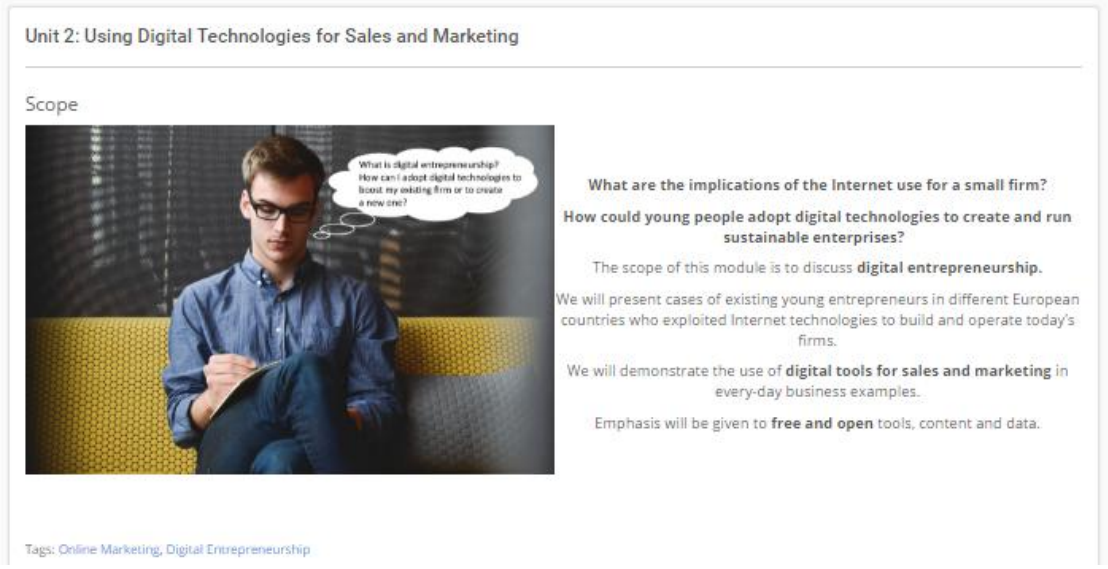

Figure 5-3: An example of the e-course unit scope using text and photo

It advisable, apart from the description of the unit contents and objectives, the instructor to create a short video (not more than 10 minutes long) as an introduction to the unit. It could be either a podcast (slide presentation covered by teacher's voice) or a video demonstrating the instructor on a model or role-play scenario. An example of the e-course unit scope using text and photo is presented in Figure 5-3.

Reading material, activities, questionnaires and everything a unit may consist of in order to be considered complete, are being created in separate modules and they are then added to the relative unit, creating the learning path that structures the material. The most common used tools that to create content for the units as described above will be presented in the following sections. There will also be given examples and tips for creating active and interesting content by using these tools.

5.4.4 Course content creation

Content of course material needs to be developed in a way suitable for online learning and for open courseware delivery. Online learning usually implies very limited or no interaction with the instructors, so the terminology and the language used, as well as the standards in structuring the material should be meticulously observed. On the other hand, open courseware means that the content should be clear of any third party intellectual property rights

A set of instructions was created to be used in the form of templates for the presentation slides and text files that were required by the course content developers in order to make sure that different instructors followed similar forms. These included: The required logos, Unit Title, Unit Objective, Guidelines for the

organization of the course material and project details, Note on History of Published Version, Reference Notes, License Notes, Preservation Notices and Note of use of third parties work.

Trainers were also supplied with a separate guide about Intellectual Property Rights. In particular advice was provided on Creative Commons (CC) and License Notes, in order to easily understand the benefits of sharing and reusing of creativity and knowledge through the provision of free legal tools (see Appendix VI: Introduction to Creative Commons Licences).

In these instructions, CC licenses were described and for each CC license separately, in order course content developers to decide which license better describes the way they prefer to share their educational material.

5.4.5 Content organization module

"Documents" is the open eclass tool in which the course content material is stored and organized (see

Figure 5-4). More precisely, this module provides a mechanism for managing, organizing and showing/hiding content of document form (texts, presentations, pictures, diagrams, etc) through a folder and sub-folder structure. This tool works as a common file manager tool, allowing the responsible teacher to organize the available course documents in folders.

In past versions of open eclass, the course structuring modules, i.e. organization of the course in course units and units content in learning paths, was not supported, so users of the platform, used it mostly for distributing handouts and lecture slides, a pattern of use that has not changed since the introduction of course structuring modules. In a recent study on patterns of use of the platform (Avouris, 2016) it was found that on average 65% of page views of the over 2,000 courses hosted in the platform for the University of Patras, were related to documents. In the OpEn courses, we advise the course developers to organize their course documents for better maintenance of course material, however access of the students in this module is not encouraged, as the students should access the course material through the appropriate links in the units and learning paths

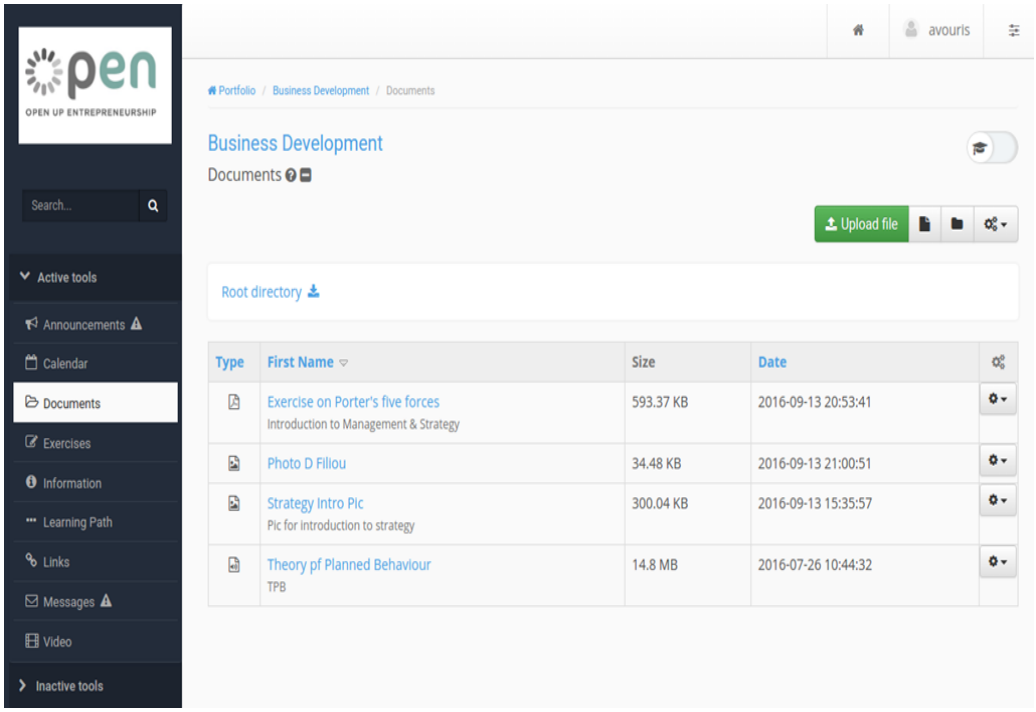

Figure 5-4: "Documents": The content organization module of open Eclass

An advice is given to upload documents of .pdf format, in order course students to view the file from within the platform, without having to download it and install an application that possibly do not have already installed in their PCs.

It is often the case that online course developers may already have course material, consisting of user manuals, course handouts and lecture notes, even presentation slides. It is very important though to realize that creating an online course necessitates transformation of this material. For self-paced e-learning in particular, material the course developers have to embed adequate support to allow learners to function independently throughout the course.

A course developer should consider the following guidelines when authoring lesson content (Ghirardini, 2011):

- Before developing the content for the assigned lessons, review the proposed learning objectives
- Make sure that the content and knowledge assessment tests and exercises "match" the lesson objectives at every step in the work flow process.
- Provide all the knowledge needed to meet the learning objectives, including information that may seem obvious to the trainer but may be unknown to learners.
- Use examples that are likely to be familiar to most, if not all, learners. People taking the course may have different backgrounds, so use a variety of examples. This will help learners understand and remember concepts.

In addition, when authoring course content, the trainer should provide all the knowledge needed to meet the learning objectives and consider that learners are not necessarily all in the same level. There should be therefore provided links to extra material that would help learners who are not very familiar to the subject access prerequisite knowledge of the course and at the same time there should be links to extra material for those who feel that they need to go a step further. It would be advised that topics should be classified for each lesson as follows:

- *Must know*: a core part of the content
- *Nice to know*: the learner could get by without this information, but it could help develop a better understanding of the subject, or add interest for the learner.

5.4.6 Multimedia Content

The use and combination of more than one kind of media to deliver content is essential for the creation of an online course. Video, audio, text and images are the four main media needed to be combined.

For creating video material it is important to use a high definition recording device that will give you the best possible outcome. Common digital recording video formats include MPEG, AVI, WMV and QuickTime. The most used image resolutions are 1920x1080 and 1280x720. From a directing point of view keep in mind that the subject should be lighten and framed property. The background should be simple as to not attract much attention and the camera must be steady. You can also create video material by using screen capturing programs, allowing you to make a video of what's happening on your screen. Suggested open source tool for

screen recording is CamStudio[23]. CamStudio will also allow you to capture audio from a microphone. As well as capturing a lecture or presentation, it can be used to record a tutorial or walk through of a system. It can be used as an alternative to Camtasia.

For creating your final video material you have to get familiar with a video editing program. The procedure is relatively easy with tons of tutorials online. This will give you control over the recorded material, letting you edit your videos, make transitions between scenes, correct color, lighting and sound. Keep in mind that your edit must be simple and not attract much attention. The mostly used container format for your final output is MPEG-4, compression encoding format H.264, resolution 1280x720 at 25 frames per second. Suggested open source tools for video editing are OpenShot[24], KDEnlive[25] and PiTiVi[26]. KDEnlive and PiTiVi are fully featured multi-track non-linear video editors. Based on open source media libraries, a wide range of video and audio formats are supported from a large number of devices. Output to standard formats including H.264 is supported, as well as lossless formats. They can be used as an alternative to Adobe Premier Pro and Final Cut Pro.

For creating audio material it is important to use a directional microphone. Furthermore, it is necessary to position it near and in front of the speakers in order to capture accurately the direct sound, and not environmental reflections. It is highly recommended to use a wireless clip-on microphone. If that is not an option you can use your cameras microphone. Common audio recording formats include MP3, WMA and FLAC. For best result you audio files are suggested to be at stereo format with bit rate at least 22.050 Hz and bit rate at 96 kbps. Suggested open source tool for audio recording is the Audacity[27]. Audacity is a fully-featured audio recorder and editor for Windows, Linux and Mac. Multiple tracks can be recorded separately and edited together. Additional audio tracks can be imported and files can be saved to a number of formats. It can be used as an alternative to Pro Tools.

For creating image material you can use a variety of mediums such as your photo camera, make snapshots from presentations and video material, or even creating them from scratch (such as buttons, banners) using an image editing program. Common image formats include JPG, PNG and GIF. For the best embedding results it is recommended to use JPG format. Keep in mind that your files must have screen-based resolution (e.g. for importing images into videos approximately 1920x720 is a well-accepted resolution). Suggested open source tool for image editing is GIMP[28]. GIMP provides a complete set of tools for editing bitmaps, including layering, effects, and color tools. Plug-ins and scripts are supported to provide extensibility. Images

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23 http://camstudio.org/

24 http://www.openshotvideo.com/

25 https://kdenlive.org/

26 http://www.pitivi.org/

27 https://sourceforge.net/projects/audacity/

28 https://www.gimp.org/

can be imported from a range of formats, including from scanners and Photoshop files. It can be used as an alternative to Photoshop.

For creating text material on images or videos, it is important to keep it simple and always to the point. Also, a good practice is to use simple fonts, such us Arial, open-sans (san-serif). Image and video editing programs can be used to create your texts and will give you lots of effect but it is preferable not to overdo it. To broaden the accessibility of your final product you have to consider subtitling it. Depending on the platform used, it may give you the possibility creating the subtitles in the platform or embed them. Suggested open source tool for subtitling your material is Amara[29]. Amara is a subtitle editor that makes also hosts volunteer localization and accessibility communities. It can be used as an alternative to YouTube subtitling.

In Appendix VII: Guidelines for Multimedia content creation, the Center of Learning Technologies of the University of Patras contributes a set of guidelines for producing educational multimedia content.

5.4.7 Glossary Module

A very important kind of course material that is important to be included in an online course is a Glossary, a space for adding and managing the terms contained in the course (for example see Figure 5-5). Online learning glossary provides fast, straightforward definitions.

Through this module offered in the Open eClass Platform, trainers have the ability to add “New Categories” and classify terms not only alphabetically but also by their meaning. In this way, every time participants meet an unknown term, they can search into Glossary and find the interpretation of this terms, along with a link offering extra notes about this term definition.

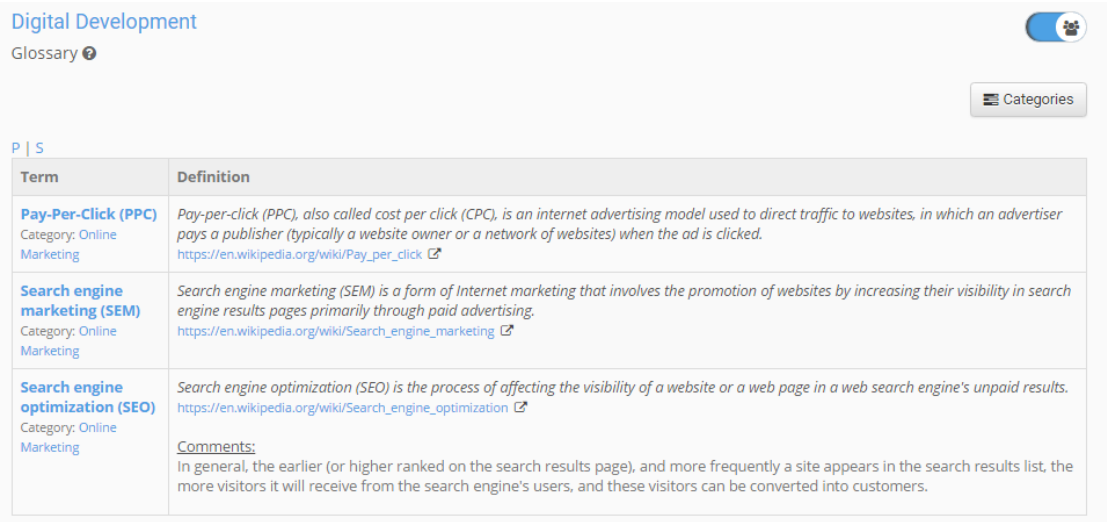


Figure 5-5: An example Glossary

[29] http://amara.org/el/

5.4.8 Exercise module

An important part of an online course is a number of self-evaluation exercises that confirm understanding key notions introduced or discussed in lectures or course documents. These are developed in the exercise module of open eclass. This module supports different exercises formats as discussed next.

As we are focusing on developing material for open courses, we must take into consideration that the patterns of interaction with these courses diverge from those of traditional courses of a face-to-face course: more structural elements of the courses should be used, more self-assessments modules and less direct interaction with students (announcements etc.), while in terms of content, new emerging media, like video take a more prominent role, without however replacing yet the dominant role of documents that we have already mentioned.

Practice and assessment questions should be designed to reinforce the achievement of learning objectives. Questions play an important role in involving learners and keeping their attention, so we should try to use them as much as we can in your storyboard.

In a job-oriented course – in our case – the questions should be placed in a job-realistic context to build knowledge and skills that can be transferred to a real world situation.

Different types of question formats should be used to catch students interest. Furthermore, practice and tests should mainly consist of questions associated with response options and feedback, so that students can self-evaluate their responses.

Questions formats generally have the following **structure**:

- a question or statement
- an operational message that indicates to the learner how to perform the required operations (e.g. click, drag, press a key)
- a series of options
- the correct answer
- feedback for the correct and incorrect answers

Different types of practice and tests should be used for different types of content. For example, other types of tests are used for memorization of facts (have learners recall features or specifications / identify pictures or objects) and other types of test are used for understanding of concepts and processes (have learners discriminate between examples and non-examples).

The most frequently used question formats include:

- **Multiple choice**: A statement that provides different options and only one is correct. This type of interaction allows for providing different feedback for each selected option.
- **Multiple responses**: The correct answer consists of more than one option, all of which must be selected.
- **True or False**: A statement with two options (true/false), where only one is correct.
- **Matching**: This type of interaction presents two series of elements. The learner must associate each element of the first series with an element of the second.

- **Fill-in the blanks**: This can be an incomplete statement to be completed by learners; or a sentence with one or more missing words or numbers. The learner must fill in the blank spaces with the appropriate terms.

An example exercise with multiple choice question format is presented in Figure 5-6.

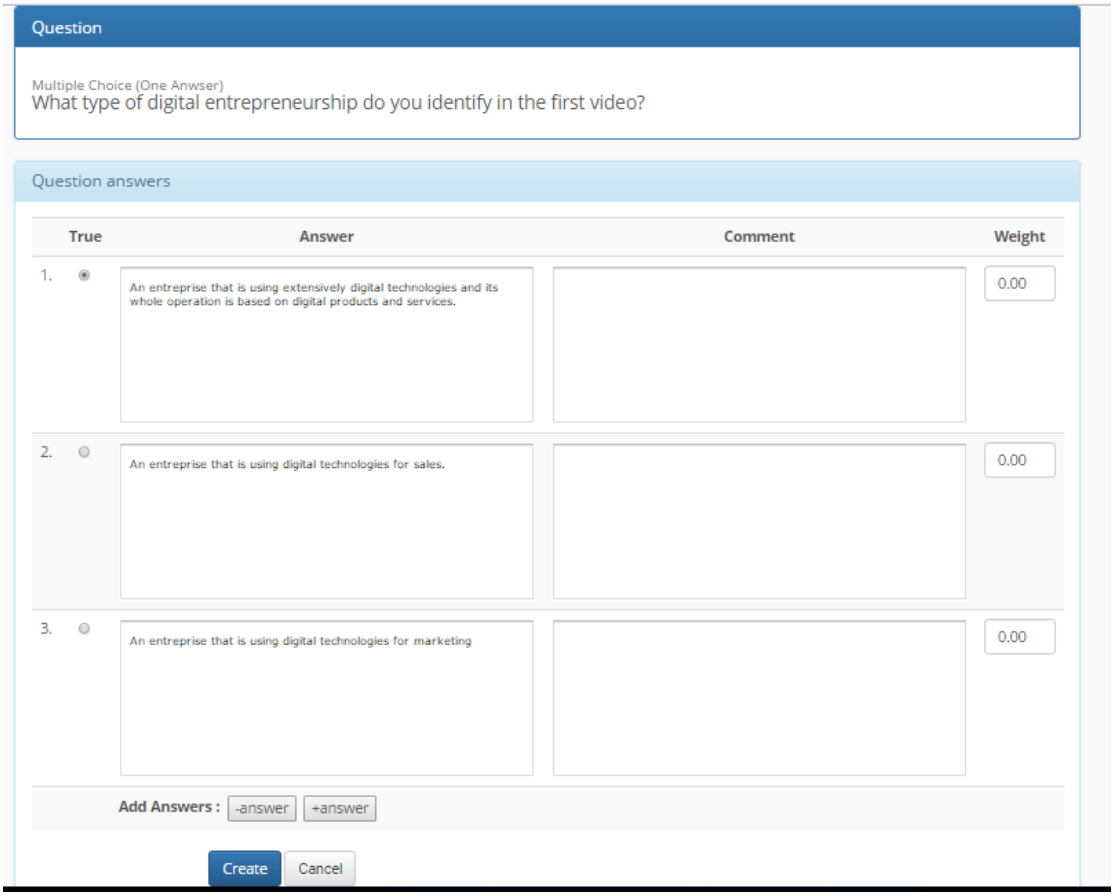


Figure 5-6: An example exercise with multiple choice question format

5.4.9 Group activities

Apart from creating exercises with the questions format described above, the course developers could examine other groupware and collaborative learning approaches. They could organise collaborative activities for the participants at the end of each unit. Because of the fact that there is no direct interaction of the participants with the trainers, participants should be urged to work in student groups. Their projects will be later uploaded in a common catalogue and other groups will be responsible for their evaluation. This kind of **peer tutoring** method offers the advantages below:

- It stimulates critical thinking and reflection
- It helps participants to develop interpersonal skills
- It stimulates attitudinal change
- It helps participants to develop problem solving skills

Case-based exercises and role plays through online group activities and interactive online lessons can also be used to help participants develop interpersonal and job-specific cognitive skills.

The Open eClass platform includes two relative modules to boost peer tutoring methods: Forum & Wiki.

5.4.9.1 Forum Module

The eCourse discussion forum is a teacher - student interaction module (see example Figure 5-7). The platform offers the opportunity to create forums, allowing participation to all registered in the course users (students and teachers). Furthermore, participants can see the last insert in every forum subject, the number of forum subjects and the number of messages. By clicking on a topic they can participate in the units it includes. More specifically, they can watch all topics discussed, the topic sender, the date the message was posted, the answers sent for the specific topic, and the number of times it has been read, as well as the date and time when the last answer was sent.

Figure 5-7: An example discussion forum

5.4.9.2 Wiki Module

The Wiki module is a collaboration course tool that allows registered users (teachers and students) to create and edit web page content. More specifically Wiki supports hyperlinks and has simple text syntax for creating new pages and cross links between internal pages on the fly.

5.4.10 Course Evaluation (Questionnaires Module)

The last session of an online course usually includes the completion of an evaluation survey that will provide course designers and facilitators with feedback from participants. This is a very useful step as it allows designers to improve the course over time. It also gives participants the feeling that designers are interested in making the course more effective. Once the course has finished, participants are asked to complete an evaluation survey. They also have the opportunity to review course content, access additional resources and listen to the after action review, that is the analysis of what happened during the course and how things can be done better in the future.

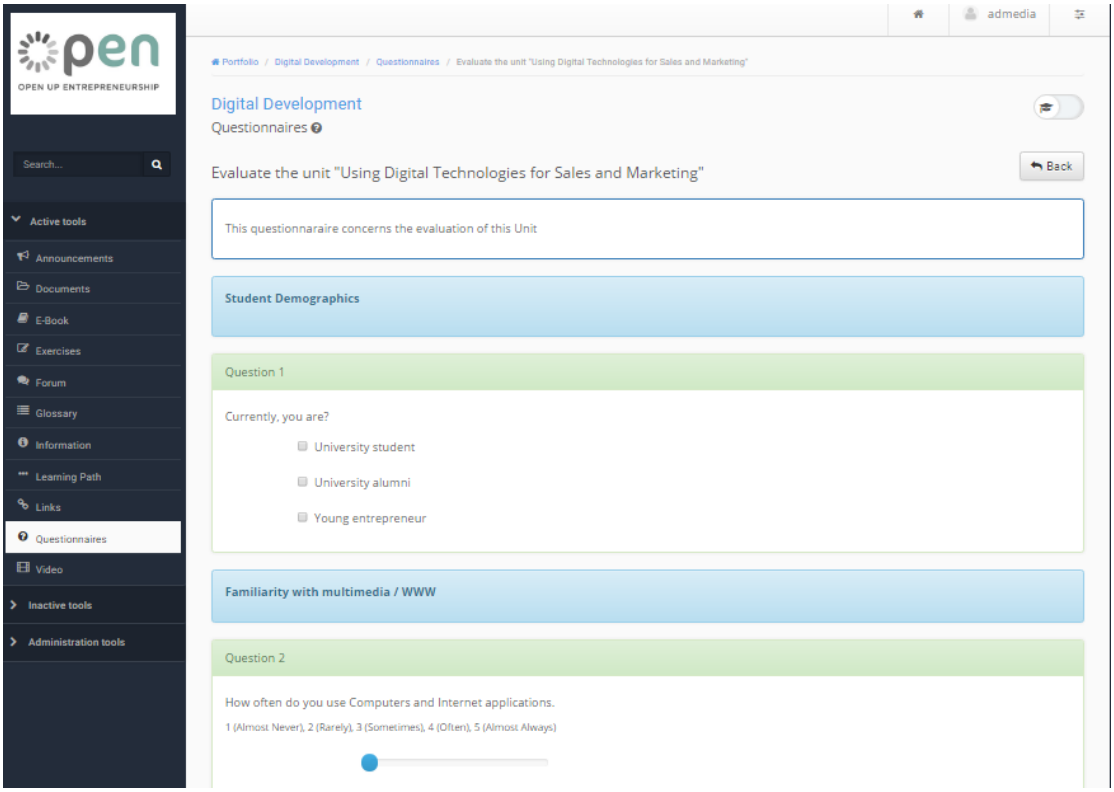


Figure 5-8: An example questionnaire for the evaluation of a course unit

The Open eClass platform includes a module which offers the capability of creating polls and student profile surveys. It can be used for the creation of a questionnaire at the end of each unit or/and at the end of the online course. Through this process, the trainer can collect information about the background / demographics of students and better understand which parts of the unit / course should be redesigned and improved.

The platform supports:

- 'Multiple-choice' questions with one or many correct answers,
- 'Gap-fill' questions with free text boxes
- Scale answers by choosing the max scale number - **Max. Scale (1-..):**

A questionnaire for the evaluation of the Unit "Using Digital Technologies for Sales and Marketing" can be found in Figure 5-8.

5.5 Conclusion

In this chapter, we have discussed the process of implementing an OpEn course using the available technology, i.e. the open eclass platform. We highlighted the typical structure of the course, the tools of open eclass to be used in this process and included some guidelines for course developers. Following these guidelines and using the presented technology can help but does not guarantee a successful online course. There various issues that have not been covered in this document. The aesthetics and look and feel of a course environment are very important and cannot be prescribed. A general rule of thumb is that the course presentation should be simple, the screen not cluttered with information, the colour code should be consistent, colour pollution should be avoided. The terminology should be clear and consistent with

reference to the glossary. Special attention should be provided towards a positive user experience of a course student, compatible with the medium used. The instructors should be less formal than in an academic environment, take less background knowledge for granted, as they address a wider and more diverse audience. Course development is an art as well as a science, so many aspects are left to the skills and talents of individual course developers.

5.6 References

Avouris N. (2016), Patterns of use of open courseware in a Greek University: the eclass.upatras.gr case, Proceedings 10th Pan-Hellenic and International Conference ICT in Education, Ioannina, September, 2016.

Ghirardini, B. (2011). E-learning methodologies: a guide for designing and developing e-learning courses. Food and Agriculture Organization of the United Nations.

6 Synopsis of MMU multiplier event

The Erasmus+ program has introduced a novelty in the implementation of projects funded within its framework that is called *multiplier event*. A *multiplier event* is an event which is organized by the consortium of an Erasmus+ project, in a partner country, with the aim to share the intellectual outputs of the project with a wider audience.

The OpEn project organized a multiplier event in Manchester, UK, in order to illustrate the work undertaken so far by the consortium and particularly the activities within Intellectual Output 2.

The event was held at the Manchester Metropolitan University (MMU), on the 15th of September 2016. Dr Victoria Daskalou, from the University of Patras, the partner that coordinates Activity 2, and Dr Despoina Filiou from MMU, the partner hosting the event, presented the consortium's activities for structuring the syllabus and designing the online learning activities of the OpEn course.

The MMU multiplier event offered an excellent opportunity to the consortium to present the structure of the online course, to discuss its design principles, to give a taster of its provision on the online platform and to get valuable feedback from the audience. A detailed account of the MMU Multiplier Event, including the qualitative feedback and the quantitative analysis of the feedback forms completed by the participants, is provided in a separate document (MMU Multiplier Event Report). We herein present some of the main issues that came out from this useful dialogue between the consortium representatives and the target audience of OpEn course:

- The proposed e-syllabus seems useful; the part dedicated to personal development can be very valuable to young entrepreneurs and self-employed young people
- The course duration (8 weeks) and the load for the participants (4 hours per week) were found feasible
- The audience proposed that the consortium should focus on specific target audience, give a clear answer to the question "whom this course is aimed at?" and develop a "brand name" for the OpEn course
- The audience agreed with the intention of the consortium to incorporate examples of bad and good practices in order to explain the proposed business methods and digital technologies and suggested teaching through scenarios and real cases.
- The audience proposed practical assessment, which should be linked to the application of the educational content in their own business
- The audience found that the format used for presenting online the taster course unit was quite busy with a layout too academic and tedious.

The consortium will be reflecting on the feedback of this multiplier event through a Skype meeting before the beginning of the forthcoming activities (which concern the production of Open Educational Material). Specific actions will be proposed to address the aforementioned issues, to improve the course design and prevent the quality of the project results (open course and open educational material).

7 Appendices

7.1 Appendix I: Course Syllabi

7.1.1 Course Syllabus: Business Development

7.1.1.1 Course information

- **Course title:**
    - **Business Development**
- **Instructor (s)**

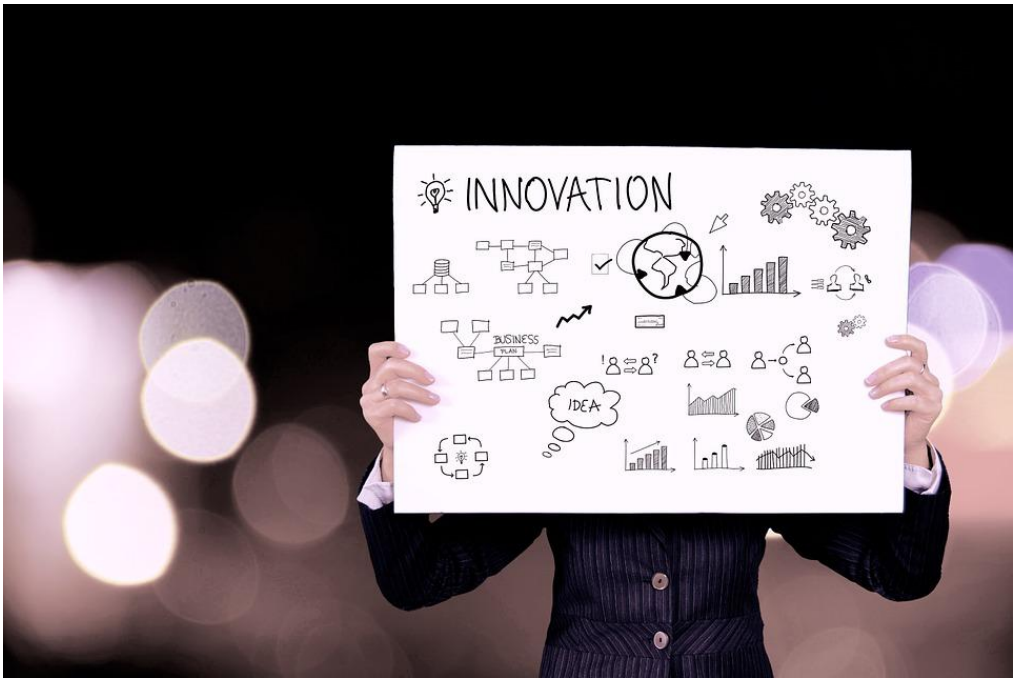
	**Dr. Despoina Filiou** Senior Lecturer in Strategy & Innovation Manchester Metropolitan University Business School URL: http://www2.mmu.ac.uk/business-school/about-us/our-staff/dept-of-management/profile/index.php?id=925
	**Dr. Antonios Aggelakis** Innovation Expert The Small Enterprises' Institute (IME GSEVEE)
	**Dr Margarita Komninou** Department of Economics University of Patras URL:http://www.econ.upatras.gr/en/people/researchers/komninou-margarita

- **Course language**
    - English, Greek, Italian, Spanish

- **Target Group**
    - Existing and prospective young entrepreneurs and managers of SMEs and micro-businesses interested in advancing their knowledge in strategic management, marketing and innovation with the view of developing a digital aspect of their business
- **More about instructor**

  Link to CV or short biography (up to 10 lines)
- **Photo of Instructor.**
- **Course Overview / Description /Synopsis**
    - The course provides a comprehensive overview of fundamental and essential concepts within business management. It introduces and enables participants to employ tools for effective strategic analysis, marketing planning and the management of innovation and new product development.
- **Course Contents (Syllabus)**
    - Strategic management in dynamic and changing environments
    - Strategic marketing management: understanding consumer behavior and undertaking market research. Developing an effective brand and managing relations with sale and distribution channels.
    - Managing the innovation process, new product and service development and business model innovation.
- **Course Objectives/Goals**

  After the completion of the course you will be able to appreciate the full extent of processes and operations that are required for developing and managing a sustainable business proposition that will satisfy changing consumer requirements and provide sustainable competitive advantage in changing external environments. Specifically, the course will assist participants in developing the necessary skills to manage the processes involved in developing new products, services and business models that can meet new market trends and evolving consumer requirements. Participants will appreciate the processes, practices and tools for analyzing the forces of change in the external industry and macro environments, to evaluate alternative positioning strategies, the processes underpinning effective brand development and building and maintaining distribution channels.
- **Keywords**
    - Strategic Management, New product development, Innovation, , Branding, Consumer Research, Marketing
- **Photo recommended for the course**



- **Instructional methods**

  A combination of podcasts, videos and case study material will be employed.

- **Assessment methods**

  A combination of quizzes and reflective exercises, involving online forum contributions and discussions.

- **Prerequisites/Prior knowledge**

  Recommended verbal description that may include general prerequisites and possible preparation for completion of the course, prerequisite courses codes and links

7.1.1.2 Course-unit Information

7.1.1.2.1 Unit 1 (Participant's time: 12 h)

- **Title:** Understanding Business and Entrepreneurship
- **Description**: This course unit aims to provide you with a comprehensive overview of the critical components by introducing some general aspects related to management and strategy, innovation processes, as well as by exploring methods and approaches of boosting entrepreneurship ventures through the implementation of innovation management techniques and the deployment of novel business models. By the end of this course unit, you will be able to understand concepts such as entrepreneurial mindset, strategic decision making, and business modeling which are core elements of the course. The course will provide you with a valuable insight and skills to identify and act on

innovative opportunities and inform the strategic development of your enterprise or business venture now, and in the future.

- **Keywords**:
- **Thematic units:**
    - **Thematic Unit 1**: Intro to management and strategy (Participant's time: 4 h)
    - **Thematic Unit 2**: Intro to marketing (Participant's time: 2 h)

      Thematic Unit 2: Innovation and entrepreneurship (Participant's time: 6 h)

7.1.1.2.2 Unit 2 (Participant's time: 4 h)

- **Title:** Understanding your customers
- **Description:** An effective and sustainable customer-centric marketing strategy requires, first of all, an understanding of the customer needs and wants. How well do you know your existing and prospective customers? This course unit aims to bring you closer to your customers by introducing some general aspects related to the consumer's buying decision-making process, as well as by exploring ways of discovering customer needs and wants through the implementation of marketing research. By the end of this course unit, you will be surprised how even a simple low-cost marketing research can contribute to discovery of valuable insight which will in return inform the strategic development of your enterprise!
- **Keywords:** consumer behaviour, decision making, profiling, research design, surveys, focus groups
- **Thematic units:**
    - **Thematic unit 1**: Essentials of Consumer Behaviour (Participant's time: 2 h)
    - **Thematic unit 2**: Market Research (Participant's time: 2 h)

7.1.1.3 Information about the Instructors' Organization

- **Organizations:** Manchester Metropolitan University [UK]; The Small Enterprises' Institute (IME GSEVEE) [Greece]; The University of Patras [Greece]
- **Departments:** Deparment of Management [MMU]; Department of Economics [UPatras]

7.1.2 Course Syllabus: Personal Development

7.1.2.1 Course information

- **Course title:**
    - **Personal Development**
- **Instructors**

	**Mr. Juan Carlos Martinez Barrio** Team Coach Director of Projects Development and Training Departments CEEI-Burgos, Spain URL: http:www.ceeiburgos.es https://www.linkedin.com/in/juan-carlos-martinez-barrio-448a9012
	**Mr. Javier Sardiñas Ortega** Senior Expert Entrepreneurship training CEEI-Burgos, Spain URL: http:www.ceeiburgos.es https://www.linkedin.com/in/javiersardignas
	**Mr. David Tome Puente** Senior Expert Entrepreneurship training. CEEI-Burgos, Spain URL: http:www.ceeiburgos.es https://www.linkedin.com/in/david-tome-puente-0a041853

	**Ms. Cristina Martínez Sanz** Junior Expert Networking and IT CEEI-Burgos, Spain URL: http:www.ceeiburgos.es https://es.linkedin.com/in/cristina-mart%C3%ADnez-sanz-609b88128

- **Course language:** English, Greek, Italian, Spanish
- **Target Group:** Young entrepreneurs, University and VET Alumni
- **Course Overview / Description /Synopsis**

The course is focused on the personal development of young entrepreneurs. It shows and describes basic personal skills included in the individual learning process in order to achieve essential capabilities required to start up and manage any enterprise.

- **Course Contents (Syllabus)**

The course is split in four parts as follows:

- Leadership and empowerment: Understanding the role of the entrepreneur in the company. Participants create leading thoughts for themselves and their organizations/start-ups/companies, based on which they will manage and steer them.
- Negotiation skills: Learning dialogical methods by which people settle differences as a process by which an agreement is reached avoiding argument or dispute.
- Networking skills: Improving networking capabilities as one of the most important skills for entrepreneurs. In the process of potential customers detection, it is essential to understand their needs and assess whether our company could offer them any valuable solution. This process includes building and maintaining relations with the appropriate people.
- Collaborating skills (Team working, communicating, establishing partnerships): Achieving dialogical competences and understanding community learning and working inspiring individuals start to commit themselves to learn and work together. Delving deeper in customer relationships in cooperation with customers.

- **Course Objectives/Goals**

This course unit will raise awareness on the importance of personal development skills related to management and business in the process of starting up a company in the participant/entrepreneur mindset.

After the optimal completion of this course unit the participant will be able to:

- Understand and learn leadership and empowerment fundamentals.
- Understand and learn essential negotiation skills.
- Understand and improve his/her networking skills.
- Understand and improve his/her collaboration skills.
- Apply these skills to actual business/entrepreneurship environment.
- Adapt these skills to his/her actual entrepreneurship project.

- **Keywords**

Personal development, developing personal skills, leadership, leadership skills, empowerment, negotiation, negotiation skills, networking, networking skills, collaboration, collaboration skills, team working, team working skills, communicating, communication, communication skills, partnerships, establishing partnerships, customer relationships.

- **Photo recommended for the course**

Photo of pixabay.com

- **Bibliography**

- *"Out of our minds: Learning to be creative Online readings". Ken Robinson*
- *"Improve your communication skills". Alan Barker*

- *"Leadership presence: Dramatic techniques to reach out, motivate and inspire". Belle Lynda Halpern & Kathy Lubar*
- *"Awareness". Anthony de Mello*
- *"The 21 irrefutable laws of leadership: Follow them and people will follow you". John C. Maxwell*
- *"Perfect pitch: The art of selling ideas and winning new business". Jon Steel*
- *"The fifth discipline (Revised and updated)". Peter M. Senge*
- *"Man's search for meaning". Viktor E. Frankl*
- *"What got you here won't get you there. How successful people become even more successful!". Marshall Goldsmith*
- *"The art of war". Sun Tzu*
- *"The medium is the massage". McLuhan/Fiore*

- **Instructional methods**

  A combination of on-line, podcasts, videos and case study material will be employed.

- **Assessment methods**

  A combination of quizzes and reflective exercises, involving online forum contributions and discussions.

- **Prerequisites/Prior knowledge**

  No specific previous knowledge or background on the issues tackled is required.

- **Textbooks**

  On-line didactic materials and recommended bibliography.

7.1.2.2 Course-unit Information

- **Title:** Developing your personal skills
- **Description:** Personal development is a long life learning process during which everyone can develop their own talents and potential, increasing the chances of achieving selected goals and objectives. An entrepreneur should be always ready to learn new things, to read and to enrich him/herself in order to keep up with the current and future fast-changing trends. Therefore, entrepreneurs should improve their social and interpersonal skills which will foster the success of their own start – ups/business. Improvement in collaborating, networking or negotiating skills, along with leadership and empowerment capabilities can help them interact better with other people, to network and to build business relationships with potential customers.

- **Keyword:** Personal development, developing personal skills, leadership, leadership skills, empowerment, negotiation, negotiation skills, networking, networking skills, collaboration, collaboration skills, customer relationships.

- **Thematic Units:**

- **Thematic Unit 1**: Leadership and empowerment (Participant's time: 1,25 h)

- **Thematic Unit 2**: Negotiation skills. (Participant's time: 1 h)

- **Thematic Unit 3**: Networking skills. (Participant's time: 1 h)

- **Thematic Unit 4**: Collaboration skills. (Participant's time: 1,25 h)

7.1.2.3 Information about the Instructors' Organization

- **Organization:**

  The European Business and Innovation Centre of Burgos (CEEI-Burgos) is a non for profit organisation formed in 1994 mainly devoted to Innovation and Entrepreneurship fostering and training.
  CEEI-Burgos is an active member of the European Business and Innovation Centre Network (EBN), working also under ESINET framework (European Space Agency Business Incubation programme). CEEI-Burgos is member of other organisations such as ANCES (National Association of Spanish BICs) and PAIT (Spanish official network for creation of new companies).

- **Department**

Projects Development and training.

7.1.3 Course Syllabus: Digital Development

7.1.3.1 Course information

- **Course title:**
    - **Digital Development**
- **Instructors**

	**Prof. Filippo Lanubile** Associate Professor Director of Collaborative Development Group (Collab) Dipartimento di Informatica University of Bari, Italy URL: http://www.di.uniba.it/~lanubile/
	**Dr. Fabio Calefato** Assistant Professor Collaborative Development Group (Collab) Dipartimento Jonico in Sistemi Giuridici ed Economici, University of Bari, Italy URL: http://collab.di.uniba.it/fabio/

	**Dr. Manolis M. Tzagarakis** Assistant professor Department of Economics University of Patras, Greece URL: https://blogs.upatras.gr/tzagara/
	**Dr. Victoria Daskalou** Special Teaching Staff Department of Economics University of Patras, Greece URL: https://blogs.upatras.gr/daskalou/
	**Mrs. Olga Georgiadou** Computer and Informatics Engineer Media and Learning Center University of Patras, Greece URL: http://media.upatras.gr/

Mr. Aristidis Koutoulogenis

Materials Scientist
M.Sc. Audiovisual Arts in the Digital Age
Media and Learning Center
University of Patras, Greece

URL: http://media.upatras.gr/

- **Course language:** English, Greek, Italian, Spanish
- **Target Group:** Young entrepreneurs, University Alumni
- **Course Overview / Description /Synopsis**

The course focus on the digital development of young entrepreneurs. It explains the fundamental issues of the Internet and related computer and communication technologies and presents how young people could adopt digital technologies to create and run today's enterprises.

- **Course Contents (Syllabus)**

The first part of the course addresses fundamental issues of the Internet technology. Initially explains the characteristics of the WWW and demonstrates information systems that are used for presenting and managing content on the web. Then it presents new methods for developing software for today's enterprises and explains in more detail the agile methodology.
The second part of the course discuss digital entrepreneurship by presenting cases of existing young entrepreneurs who exploited Internet technologies and business applications to build and operate today's firms. The course demonstrates the use of digital tools for sales and marketing in every-day business examples, with emphasis to free and open tools, content and data.

- **Course Objectives/Goals**

At the end of this course unit young, existing or prospective entrepreneurs, will be able to:

  - Understand fundamental issues of the Internet technology
  - Understand basic characteristics of the WWW operation
  - Use Content Management Systems
  - Understand the agile methodology for software development
  - Understand what is digital entrepreneurship
  - Recognize how to exploit digital technologies in order to build and operate a micro-firm
  - Use open and low-cost digital tools in simple business tasks

- Adopt digital technologies for sales and marketing purposes

- **Keywords**

digital business development, Internet, WWW, Content Management Systems, agile methodology, digital entrepreneurship, business applications, digital marketing, online sales, social media, collaborative tools, open tools

- **Photo recommended for the course**

Photo of Gerd Altmann@pixabay.com

- **Bibliography**

  (to be completed with recommended verbal description that includes the following: Bibliography, Online readings, Sources on the Internet, Other relevant open courses, Articles, Films)

- **Instructional methods**

  A combination of podcasts, videos and case study material will be employed.

- **Assessment methods**

  A combination of quizzes and reflective exercises, involving online forum contributions and discussions.

- **Prerequisites/Prior knowledge**

  (to be completed with recommended verbal description that may include general prerequisites and possible preparation for completion of the course, prerequisite courses codes and links)

- **Textbooks**

  (to be completed with recommended open text books)

7.1.3.2 Course-unit Information

7.1.3.2.1 Unit 1 (Participant's time: 4 h)

- **Title:** Understanding key digital technologies

- **Description:** This course unit aims to provide you with a comprehensive overview of the key digital technologies by introducing some general aspects related to Web technologies and Content Management Systems and Agile methods for software development. By the end of this course unit, you will be able to understand key concepts of the modern ICT arena. The course will provide you with valuable insights and skills to identify key opportunities for the information and software development needs of your enterprise or business venture now, and in the future.

- **Keywords**: Internet, WWW, Content Management Systems, agile methodology

- **Thematic units:**

  - **Thematic Unit 1**: Web technologies and Content Management Systems (Participant's time: 2 h)

  - **Thematic Unit 2**: Agile methods for software development (Participant's time: 2 h)

7.1.3.2.2 Unit 2 (Participant's time: 7,5 h)

- **Title:** Using Digital Technologies for Sales and Marketing

- **Description:** What are the implications of the Internet use for a small firm? How could young people adopt digital technologies to create and run sustainable enterprises? The scope of this module is to discuss digital entrepreneurship. We will present cases of existing young entrepreneurs in different European countries who exploited Internet technologies and adopted digital business applications to build and operate today's firms. We will demonstrate the use of digital tools for sales and marketing in every-day business examples. Emphasis will be given to free and open tools, content and data.

- **Keywords:** digital entrepreneurship, business applications, digital marketing, online sales, social media, collaborative tools, open tools

- **Thematic units:**

  - **Thematic unit 1**: Digital Entrepreneurship and Business Applications (Participant's time: 2 h)

  - **Thematic unit 2**: Digital technologies for marketing (Participant's time: 2 h)

  - **Thematic unit 3**: Online sales (Participant's Time: 1,5 h)

- **Thematic unit 4**: Social media and collaborative tools: Deployment and Analytics (Participant's Time: 2 h)

7.1.3.3 Information about the Instructors' Organization

- **Organizations:** The University of Bari and the University of Patras

- **Departments:** Collaborative Development Group (Collab) [UBari]; Department of Economics [UPatras]; Media Learning Centre [UPatras]

7.2 Appendix II: Course Plans

7.2.1 Course-unit Plan: Understanding Business and Entrepreneurship

7.2.1.1 Scope

This course unit aims to provide you with a comprehensive overview of the critical components by introducing some general aspects related to management and strategy, innovation processes, as well as by exploring methods and approaches of boosting entrepreneurship ventures through the implementation of innovation management techniques and the deployment of novel business models. By the end of this course unit, you will be able to understand concepts such as entrepreneurial mindset, strategic decision making, and business modeling which are core elements of the course. The course will provide you with a valuable insight and skills to identify and act on innovative opportunities and inform the strategic development of your enterprise or business venture now, and in the future.

7.2.1.2 Learning Objectives

Knowledge *(what participants should know and understand by the time the course-unit is completed)*
Participants will be able to:

- Understand the fundamentals elements in the theory of innovation management and strategy
- Recognise important factors that influence the marketing research and marketing analyses processes
- Recognise the importance of marketing research and its relevance to strategic business planning
- Distinguish between quantitative and qualitative research methodology
- Understand the major innovation theory elements and grasp fundamental concepts in innovation processes and entrepreneurship
- Understand the innovation management methods process
- Identifying major contemporary methods and tools for product development and design
- Understand the business model concept and be able to prioritize drivers on the business models' design and deployment.

S**kills** *(what participants should be able to do by the time the course-unit is completed)*
Participants will be able to:

- Apply tools for analyzing the external and internal business environment to inform strategic decision making
- Design a strategy and innovation plan or manage efficiently business modeling processes
- Design a marketing research with emphasis to branding, channels and sales
- Utilise research findings in order to plan and develop informed decisions on strategy and innovation

Attitudes (*what the participants' opinions will be about the subject matter of the course-unit by the time it is completed*)

- Participants will be able to:
- Reflect upon perceived understanding of management, strategy and innovation concepts

- Plan to undertake an innovation management plan
- Revise business strategy and business model according to market research insights

7.2.1.3 Thematic units

7.2.1.3.1 Title: Intro to management and strategy

7.2.1.3.1.1 Participant's Time: 4 hours

7.2.1.3.1.2 Structure (list of activities):

Description of Participant's activity	**Learning Objective**	**Technique**	**Eclass tool**	**Format of open material**	**Assessment**	**Preparation actions for educator**	**Language**	**Transcripts**
Review material, watch podcast, engage in reflective exercise	Develop an understanding of main forces of change in the external environment	Lecture	Podcast	Video	Exercise	Develop relevant material for the podcast and a relevant exercise	English	
Watch video and a demonstration	Understand the main tools for analyzing the external environment and how they affect competition	Video, demonstration	Video, Podcast	Video	Reflective exercise (blog/forum discussion)	Develop relevant material explaining the tools of analysis. Develop a demonstration and identify relevant video with an application.	English	
Review material, watch podcast	Understand the main tools for internal analysis to identify sources of unique competitive	Lecture, demonstration	Video, podcast	Slides	Reflective exercise	Develop relevant material explaining the tools of analysis. Develop a demonstration and	English	

	advantage					identify relevant video with an application.		
Review material, watch podcast	Combine external and internal analysis and identify appropriate positioning strategies and business model propositions	Lecture, demonstration	Podcast	Video, slides	Exercise (reflective: forum discussion)	Develop podcast and demonstrate how tools for strategic analysis can be applied. Develop a relevant exercise	English	

7.2.1.3.2 Title: Intro to marketing

7.2.1.3.2.1 Participant's Time: 2 hours

7.2.1.3.2.2 Structure (list of activities):

Description of Participant's activity	**Learning Objective**	**Technique**	**Eclass tool**	**Format of open material**	**Assessment**	**Preparation actions for educator**	**Language**	**Transcripts**
Review and read material – solve exercise	Introduction - Recognise the importance of marketing	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop quiz	English	
Review and read material – solve exercise	Understand qualitative and quantitative methods	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop quiz	English	
Review and read material – solve exercise	Undestand market analysis and marketing research	Reading material	Documents Additional resources	Slides	Exercise	Define relevant material and develop quiz	English	

			Links					
Review and read material – solve exercise	Understand branding, channels and sales.	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop exercise	English	

7.2.1.3.3 Title: Innovation and entrepreneurship

7.2.1.3.3.1 Participant's Time: 6 hours

7.2.1.3.3.2 Structure (list of activities):

Description of Participant's activity	**Learning Objective**	**Technique**	**Eclass tool**	**Format of open material**	**Assessment**	**Preparation actions for educator**	**Language**	**Transcripts**
Review and read material – solve exercise	Recognise importance of innovation and entrepreneurship	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop quiz	English	
Review and read material – solve exercise	Understand innovation management	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop quiz	English	
Review and read material – solve exercise	Understand new business models	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop quiz	English	
Review and read material – solve	Understand new ventures and new	Reading material	Documents Additional	Slides	Exercise	Define relevant material and develop	English	

exercise	product development		resources Links			exercise		

7.2.2 Course-unit Plan: Understanding your customers

7.2.2.1 Scope

An effective and sustainable customer-centric marketing strategy requires, first of all, an understanding of the customer needs and wants. How well do *you* know *your* existing and prospective customers?
This course unit aims to bring you closer to your customers by introducing some general aspects related to the consumer's buying decision-making process, as well as by exploring ways of discovering customer needs and wants through the implementation of marketing research. By the end of this course unit, you will be surprised how even a simple low-cost marketing research can contribute to discovery of valuable insight which will in return inform the strategic development of your enterprise!

7.2.2.2 Learning Objectives

Knowledge *(what participants should know and understand by the time the course-unit is completed)*

Participants will be able to:

- Understand the consumer decision making process
- Recognise important factors that influence the decision making process
- Recognise the importance of marketing research and its relevance to strategic business planning
- Distinguish between quantitative and qualitative research methodology

Skills *(what participants should be able to do by the time the course-unit is completed)*

Participants will be able to:

- Design a marketing research
- Utilise research findings in order to inform participant's understanding of consumer behaviour

Attitudes (*what the participants' opinions will be about the subject matter of the course-unit by the time it is completed*)

Participants will be able to:

- Reflect upon perceived understanding of customers' needs and wants
- Plan to undertake a marketing research
- Revise business strategy according to consumer demands and market research insight

7.2.2.3 Thematic units

7.2.2.3.1 Title: Essentials of Consumer Behaviour

7.2.2.3.1.1 Participant's Time: 2 hours (+2 hours extra material)

7.2.2.3.1.2 Structure (list of activities):

Description of Participant's activity	**Learning Objectives**	**Technique**	**Eclass tool**	**Format of open material**	**Assessment**	**Preparation actions for educator**	**Original Language**	**Transcripts**
Watch video and solve quiz	recognise the connection between consumer behaviour and marketing strategy (connect with prior knowledge)	Lecture	Video	Video file	Quiz	Define relevant material and develop video and quiz	Greek	English
Watch video and solve quiz	understand the consumer buying decision-making process and distinguish between individual and organisational buying process	Lecture	Slides	Video file	Quiz	Define relevant material and develop video and quiz	Greek	English
Watch video and do excercise	describe and explain the black box consumer model	Lecture	Video	Video file	Exercise (fill the gaps)	Define relevant material and develop video and exercise	Greek	English
Watch video and solve quiz	recognise importance of Sensory Thresholds	Storytelling /case study and text	Video	Video file	Quiz	Define relevant material, find case study, develop video	Greek	English

	(absolute and differential)					and quiz		
Watch video and solve quiz	understand perception and its complexities	Case study and text	Video	Video	Quiz	Define relevant material, find case study, develop video and quiz	Greek	English
Watch video and do exercise	develop a perceptual map	Demonstration	Video	Video file	Exercise/blog/forum	Define relevant material and develop video and exercise	Greek	English
Read material and solve quiz	become familiar with the concepts of loyalty, routine and involvement	Lecture	Text	Text	Quiz	Define relevant material and develop text and quiz	English	
Watch video and solve quiz	recognise the power of Word of Mouth: reference groups and opinion leaders in social networks	Case study	Video/text	Video file	Quiz	Define relevant material, find case study, develop video and quiz	Greek	English
EXTRA MATERIAL								
Read material and do reflective exercise	identify opportunities and challenges in online shopping behaviour	Research document	Text	Text file	Reflective exercise (blog/forum)	Define relevant material, find research document, develop text and reflective exercise	English, Greek	
Watch video and do exercise	recognise the impact of culture in	Storytelling	Video		Exercise (Blog/Forum)	Define relevant material, find case	Greek	English

	shopping behaviour					study, develop storyboard/video and exercise		
Watch video and solve quiz	understand Innovation and its adoption process	Lecture	Video	Video/Slides	Quiz	Define relevant material, develop video and quiz	Greek	English
Read material and do reflective exercise	reflect on ethics and Corporate Social Responsibility (CSR)	Storytelling	Video	Video/animation	Reflective exercise (blog/forum)	Define relevant material, find case study, develop storyboard/video and reflective exercise	Greek	English

7.2.2.3.2 Title: Market Research

7.2.2.3.2.1 Participant's Time: 2 hours

7.2.2.3.2.2 Structure (list of activities):

Description of Participant's activity	**Learning Objective**	**Technique**	**Eclass tool**	**Format of open material**	**Assessment**	**Preparation actions for educator**	**Language**	**Transcripts**
Watch video and solve quiz	recognise importance of marketing research	Lecture	Video	Slides	Quiz	Define relevant material and develop video and quiz	Greek	English
Watch video and solve quiz	understand quantitative methods (tools and analysis)	Lecture	Video	Slides	Quiz	Define relevant material and develop video and quiz	Greek	English
Watch video and solve quiz	understand qualitative methods	Lecture	Video	Slides	Quiz	Define relevant material and develop	Greek	English

	(tools and analysis)					video and quiz		
Watch video and do exercise	design a Marketing Research (design/sampling/bias)	Lecture	Video	Slides	Exercise (possible connection with ICT course unit)	Define relevant material and develop video and exercise	Greek	English

7.2.3 Course-unit Plan: Developing your personal skills

7.2.3.1 Scope:

Personal development is a long life learning process during which everyone can develop their own talents and potential, increasing the chances of achieving selected goals and objectives. An entrepreneur should be always ready to learn new things, to read and to enrich him/herself in order to keep up with the current and future fast-changing trends. Therefore, entrepreneurs should improve their social and interpersonal skills which will foster the success of their own start –ups/business. Improvement in collaborating, networking or negotiating skills, along with leadership and empowerment capabilities can help them interact better with other people, to network and to build business relationships with potential customers.

7.2.3.2 Learning Objectives

Knowledge *(what participants should know and understand by the time the course-unit is completed)***:** Basic understanding of leadership, empowerment, negotiation, networking and collaborative competences will be acquired.

Skills *(what participants should be able to do by the time the course-unit is completed)***:** Participants will improve their own capabilities and skills in leadership, empowerment, negotiation, networking, communication, team working and customer relationships.

Attitudes (*what the participants' opinions will be about the subject matter of the course-unit by the time it is completed*)**:** This course unit will raise awareness on the importance of personal development skills related to management and business in the process of starting up a company in the participant/entrepreneur mindset.

7.2.3.3 Thematic units

7.2.3.3.1 Title: Leadership and empowerment

7.2.3.3.1.1 Participant'sTime: 1,25 h

7.2.3.3.1.2 Structure (list of activities):

Description of Participant's activity	Learning Objective	Technique	Eclass tool	Format of open material	Assessment	Preparation actions for educator	Original Language	Transcripts/Translations

Leadership Leading thoughts and vision	Understanding the role of the entrepreneur in the company. Participants create leading thoughts for themselves and their organizations/start-ups/companies	Reading material. Case study	Documents, additional resources, links	Text/slides	Quiz, 5 min	Define relevant material and prepare quiz	English	ES, IT, GR
Leadership Basics. Motivating and inspiring people	Become aware of different leadership models and techniques	Reading material. Case study	Video	Text/slides/video	Quiz, 5 mins	Define relevant material, including video resources, and prepare quiz	English	ES, IT, GR
Empowerment techniques Non-directive management techniques	Introducing productive relations between management and staff in order to give employees the responsibility to take decisions independently.	Reading material. Case study	Video	Text/slides/video	Quiz, 5 min	Define relevant material, including video resources, and prepare quiz	English	ES, IT, GR

7.2.3.3.2 Title: Negotiation skills

7.2.3.3.2.1 Participant'sTime: 1 h

7.2.3.3.2.2 Structure (list of activities):

Description of Participant's activity	**Learning Objective**	**Technique**	**Eclass tool**	**Format of open material**	**Assessment**	**Preparation actions for educator**	**Original Language**	**Transcripts/Translations**
Negotiation techniques Effective business negotiation fundamentals	Understanding and improving basic negotiation skills in a business / entrepreneurship environment	Reading material. Case study	Video	Text/slides/video	Quiz, 5 min	Define relevant material, including video resources, and prepare quiz	English	ES, IT, GR
Dialogical skills Understanding negotiation and dialogical basic skills	Learning dialogical methods by which people settle differences as a process by which an agreement is reached avoiding argument or dispute.	Reading material. Case study	Documents, additional resources, links	Text/slides	Exercise	Define relevant material and prepare exercise	English	ES, IT, GR

7.2.3.3.3 Title: Networking skills

7.2.3.3.3.1 Participant'sTime: 1 h

7.2.3.3.3.2 Structure (list of activities):

Description of Participant's activity	**Learning Objective**	**Technique**	**Eclass tool**	**Format of open material**	**Assessment**	**Preparation actions for educator**	**Original Language**	**Transcripts**
Networking basics Networking fundamentals	Understanding how networking can help entrepreneurs	Reading material. Case study	Video	Text/slides/ video	Quiz, 5 min	Define relevant material, including video resources, and prepare quiz	English	ES, IT, GR
Networking situations Types of networks	Identifying different types of networks	Reading material. Case study	Documents, additional resources, links	Text/slides	Quiz, 5 min	Define relevant material and prepare quiz	English	ES, IT, GR

7.2.3.3.4 Title: Collaborative skills (Team working, communicating, establishing partnerships)

7.2.3.3.4.1 Participant'sTime: 1,25 h

7.2.3.3.4.2 Structure (list of activities):

Description of Participant's activity	**Learning Objective**	**Technique**	**Eclass tool**	**Format of open**	**Assessment**	**Preparatio nactions for educator**	**Original**	**Transcripts**

				material			**Language**	
Team working Collaborative working fundamentals	Understanding community learning and working inspiring individuals start to commit themselves to work together	Reading material. Case study	Documents, additional resources, links	Text/slides	Quiz, 5 min	Define relevant material and prepare quiz	English	ES, IT, GR
Communication skills Basic communication and presentation/pitching techniques	Improving communication skills in business/entrepreneurship environments	Reading material. Case study	Video	Text/slides/video	Exercise	Define relevant material and prepare exercise	English	ES, IT, GR
Establishing partnerships Customer relationship fundamentals	Understanding custormer relationships in cooperation with customers	Reading material. Case study	Documents, additional resources, links	Text/slides	Quiz, 5 min	Define relevant material and prepare quiz	English	ES, IT, GR

7.2.4 Course-unit Plan: Understanding key digital technologies

7.2.4.1 Scope

This course unit aims to provide you with a comprehensive overview of the key digital technologies by introducing some general aspects related to Web technologies and Content Management Systems, as well as Agile methods for software development. By the end of this course unit, you will be able to understand key concepts of the modern ICT arena. The course will provide you with valuable insights and skills to identify key opportunities for the information and software development needs of your enterprise or business venture now, and in the future.

7.2.4.2 Learning Objectives

Knowledge *(what participants should know and understand by the time the course-unit is completed)*
Participants will be able to:

- Understand the fundamentals elements of the web and its architecture
- Understand main concepts of Content Management Systems
- Understand how to increase the number of visitors to a website
- Understand the main activities behind software development and how they are related each other
- Understand the main concepts of agile development
- Identify the roles, events and artifacts of the Scrum framework

S**kills** *(what participants should be able to do by the time the course-unit is completed)*
Participants will be able to:

- Apply tools for managing content on the web
- Apply tools to monitor traffic on a website
- Participate to Scrum-based agile processes

Attitudes (*what the participants' opinions will be about the subject matter of the course-unit by the time it is completed*)
Participants will be able to:

- Reflect upon the importance of a well-managed website
- Reflect upon the importance of agile methods

7.2.4.3 Thematic units

7.2.4.3.1 Title: Web technologies and Content Management Systems

7.2.4.3.1.1 Participant's Time: 2 hours

7.2.4.3.1.2 Structure (list of activities):

Description of Participant's activity	**Learning Objective**	**Technique**	**Eclass tool**	**Format of open material**	**Assessment**	**Preparation actions for educator**	**Language**	**Transcripts**
Review and read material – solve exercise	Introduction - Understand the key components of the web	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop quiz	English	
Review and read material – solve exercise	Understand the LAMP architecture	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop quiz	English	
Review and read material – solve exercise	Understand the main concepts of CMS	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop quiz	English	
Watch video and a demonstration	Understand how to install and extend Wordpress	Video, demonstration	Video, Podcast	Video	Reflective exercise	Develop relevant material and develop a demonstration	English	
Review and read material – solve exercise	Understand the main concepts of SEO and analytics	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop quiz	English	

7.2.4.3.2 Title: Agile methods for software development

7.2.4.3.2.1 Participant's Time: 2 hours

7.2.4.3.2.2 Structure (list of activities):

Description of Participant's activity	Learning Objective	Technique	Eclass tool	Format of open material	Assessment	Preparation actions for educator	Language	Transcripts
Review and read material – solve exercise	Understand software processes in general, and agile processes in particular	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop quiz	English	
Review and read material – solve exercise	Understand the roles of the Scrum framework	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop quiz	English	
Review and read material – solve exercise	Understand the events of the Scrum framework	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop quiz	English	
Review and read material – solve exercise	Understand the artifacts of the Scrum framework	Reading material	Documents Additional resources Links	Slides	Exercise	Define relevant material and develop exercise	English	

7.2.5 Course-unit Plan: Using digital technologies for sales and marketing

7.2.5.1 Scope:

What are the implications of the Internet use for a small firm? How can young people adopt digital technologies to create and run sustainable enterprises? The scope of this module is to present digital entrepreneurship by presenting cases of existing young entrepreneurs who exploited Internet technologies to build and operate today's firms. The use of digital tools for online sales and marketing will be demonstrated in every-day business examples. Emphasis will be given to free and open tools, content and data.

7.2.5.2 Learning Objectives

- **Knowledge** *(what participants should know and understand by the time the course-unit is completed)***:**
  - Participants will be able to understand what is digital entrepreneurship and how young entrepreneurs can exploit Internet technologies to build and operate their micro-firms
- **Skills** *(what participants should be able to do by the time the course-unit is completed)***:** Participants will be able to use open or low-cost digital tools in simple business tasks with emphasis in online sales and marketing
- **Attitudes** (*what the participants' opinions will be about the subject matter of the course-unit by the time it is completed*) **:** Participants will develop positive attitudes towards the use of digital tools in today's micro-frims

7.2.5.3 Thematic units

7.2.5.3.1 Title: Digital Entrepreneurship and Business Applications

7.2.5.3.1.1 Participant's Time: 2 h

7.2.5.3.1.2 Structure (list of activities):

Description of Participant's activity	**Learning Objective**	**Technique**	**Eclass tool**	**Format of open material**	**Assessment**	**Preparation actions for educator**	**Original Language**	**Transcripts/Translations**
Digital entrepreneurship: drivers and barriers Listen to stories of	Become familiar with ways of involvement in digital business,	Entrepreneur Storytelling	Video	Video, 3 x 3 mins	Quiz, 5 min	Arrange video interviews with young entrepreneurs in 3 countries or find	Greek Spanish English	EN, ES, IT EN, GR, IT ES, GR, IT

young entrepreneurs in 3 types of digital business (mild, moderate, extreme)	benefits and barriers					CC video Prepare quiz		
Digital business models: Listen about models for digital entrepreneurship with emphasis on innovation/disruption	Become aware of different digital business models	Lecture	Video	Animated slides with podcasting, 5 min	Quiz, 5 mins	Prepare material based on Hull et al. 2007, and http://digitalenterprise.org/ Prepare quiz	Greek	EN, ES, IT
Business applications: Listen about applications in various business processes	Become aware of business applications	Lecture Glossary	Video, Glossary	Animated slides podcasting, 5 min	Quiz, 5 min	Prepare material Prepare quiz	Greek	EN, ES, IT
Organize your small business with ICT: View demo of 2 (Open/Free/ Low cost) Business Applications in real business cases	Understand simple uses of business applications	Demonstration	Video	Podcast & screen capture of business applications) , 2 x 5 min	Practice, see next activity	- Chose, install, use FOSS desktop business applications - Prepare podcast based on examples	Greek	EN, ES, IT
Experience ICT in simple business tasks: Chose a (Open/Free/ Low cost) business application from 2 categories, use it for specific problems and share your experience + Peer review using blog	Practice business applications with simple open data	Team work	Documents for instructions & data Team tools (forums, etc) to discuss Blog (to share your	Text to give instructions for work Open data		Prepare instructions and find open data	English	GR, ES, IT

comments			experience)					
Learn more about FOSS for business: Review list of (Open/Free/ Low cost) tools for business to find one that suits your needs	Explore ICT tools for business	Additional Reading Material	Documents Links	Text Links		Prepare list of (Open/Free/ Low cost) tools for business & links based on related articles. For exampe: http://www.cio.com/article/2380921/open-source-tools/how-to-run-your-small-business-with-free-open-source-software.html	English	GR, ES, IT
Evaluate this Course-Unit		Evaluation	Questionnaire	Text		Prepare questions	English	GR, ES, IT

7.2.5.3.2 Title: Digital technologies for marketing

7.2.5.3.2.1 Participant's Time: 2 h

7.2.5.3.2.2 Structure (list of activities):

Description of Participant's activity	Learning Objective	Technique	Eclass tool	Format of open material	Assessment	Preparation actions for educator	Original Language	Transcripts/Translations
Digital marketing Listen to stories of young entrepreneurs using digital technologies for marketing	Become familiar with digital marketing	Entrepreneur Storytelling	Video	Video, 2 x 3 mins	Quiz, 5 min	Arrange video interviews with young entrepreneurs or find CC video Prepare quiz	Greek	EN, ES, IT
Types of digital marketing	Understand ways of using digital technologies for marketing purposes	Lecture Glossary	Video, Glossary	Animated slides podcasting, 5 min	Quiz, 5 min	Prepare material Prepare quiz	Greek	EN, ES, IT
Digital content for marketing purposes	Become familiar with open multimedia content (images & video) for online marketing	Lecture	Video	Podcast and screen capture, 5 min	Quiz, 5 min	Prepare material Prepare quiz	Greek	EN, ES, IT
Digital marketing in practice: Google adwords View demo application of Google Adwords	View practical examples of digital marketing	Demonstration	Video	Podcast & screen capture of Google Adwords in practice , 5	Practice, see next activity	Prepare podcast based on existing case	Greek	EN, ES, IT

				min				
Online trends	Practice online tools to help your e-marketing strategy	Team work	Documents for instructions & data Team tools (forums, etc) to discuss Blog (to share your experience)	Text to give instructions for work		Prepare instructions	English	GR, ES, IT

7.2.5.3.3 Title: Online sales

7.2.5.3.3.1 Participant's Time: 1,5 h

7.2.5.3.3.2 Structure (list of activities):

Description of Participant's activity	**Learning Objective**	**Technique**	**Eclass tool**	**Format of open material**	**Assessment**	**Preparation actions for educator**	**Original Language**	**Transcripts**
Online sales Listen to stories of young entrepreneurs using online sales	Become familiar with online sales	Entrepreneur Storytelling	Video	Video, 1 x 3 mins	Quiz, 5 min	Arrange video interviews with young entrepreneurs or find CC video Prepare quiz	Greek	EN, ES, IT
Ways of selling online	Identify ways of using technology to sell online	Lecture Glossary	Video, Glossary	Animated slides podcasting, 5 min	Quiz, 5 min	Prepare material Prepare quiz	Greek	EN, ES, IT
Online sales in practice	View practical example of selling	Demonstration	Video	Podcast & screen	Quiz, 5 min	Prepare podcast based on existing case	Greek	EN, ES, IT

	online			capture, 5 min		(shopify or jamjar)		
Online sales technology	Become familiar with technology for online sales	Team work	Documents for instructions & data Team tools (forums, etc) to discuss Blog (to share your experience)	Text to give instructions for work	Peer review through blog likes and comments	Prepare instructions Find sites of reference for technologies used in online sales	English	GR, ES, IT

7.2.5.3.4 Title: Social media and collaborative tools: Deployment and Analytics

7.2.5.3.4.1 Participant's Time: 2 h

7.2.5.3.4.2 Structure (list of activities):

Description of Participant's activity	**Learning Objective**	**Technique**	**Eclass tool**	**Format of open material**	**Assessment**	**Preparation actions for educator**	**Original Language**	**Transcripts**
Social media for business purposes Listen to stories of young entrepreneurs using social media	Become familiar with social media for business	Entrepreneur Storytelling	Video	Video, 1 x 3 mins	Quiz, 5 min	Arrange video interview with young entrepreneurs or find CC video Prepare quiz	Greek	EN, ES, IT
Why social media for business?	Understand social media uses for micro-firms, benefits and barriers	Lecture Glossary	Video, Glossary	Animated slides podcasting, 5 min	Quiz, 5 min	Prepare material Prepare quiz	Greek	EN, ES, IT
Social media in	View practical	Demonstrati	Video	Podcast &	Quiz, 5	Prepare podcast	Greek	EN, ES,

practice	example of building a page on facebook	on		screen capture, 5 min	min			IT
Collaborative tools for business purposes Listen to stories of young entrepreneurs using collaborative tools	Become familiar with collaborative tools for business	Entrepreneur Storytelling	Video	Video, 1 x 3 mins	Quiz, 5 min	Arrange video interview with young entrepreneurs or find CC video Prepare quiz	Greek	EN, ES, IT
Why collaborative tools for business?	Understand use of collaborative tools for micro-firms	Lecture Glossary	Video, Glossary	Animated slides podcasting, 5 min	Quiz, 5 min	Prepare material Prepare quiz	Greek	EN, ES, IT
Collaborative tools in practice	View practical example of building Google forms for market research	Demonstrati on	Video	Podcast & screen capture, 5 min	Quiz, 5 min	Prepare podcast	Greek	EN, ES, IT
Analysing data from social media	Practice online tools for analysing social media data	Team work	Documents for instructions & data Team tools (forums, etc) to discuss Blog (to share your experience)	Text to give instructions for work	Peer review through blog likes and comment s	Prepare instructions Find sites of reference for online tools that analyse social media data	English	GR, ES, IT

7.3 Appendix III: Text Template for the Educational Material

Course Title

Unit: Unit Title

Trainer's name

Trainer's Affiliation

1 Unit Scope

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2 Unit Contents

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4 Introduction Text

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5 Use of MS-Word Columns

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6 Use of Tables

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7 Alternative text to a picture

Notes

Note on History of Published Version

The present work is the edition X.YZ.

The following editions have preceded:

- Edition X1.Y1Z1 available here. (add the relative link at «here»).
- Edition X2.Y2Z2 available here. (add the relative link at «here»).
- Edition X3.Y3Z3 available here. (add the relative link at «here»).

Reference Notes - Citation

When citing an online source, your citation should contain the following elements:

- the author or editor (if available),
- the title of the text (if different from the name of the website)
- the name of the website,
- the name of the site's sponsor or associated institution or organization,
- the date you accessed the site,
- the electronic address (URL).

For example, a short work posted on a website would be formatted in MLA style as follows:

> McCort, Dennis. "Kafka and the Coincidence of Opposites." Romantic Circles Praxis Series: Romanticism and Buddhism. Feb. 2007. Romantic Circles. 21 Apr. 2008 <www.rc.umd.edu/praxis/buddhism/mccort/mccort.html>.

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Image 7: < reference ><license> <link><source><…>

Tables

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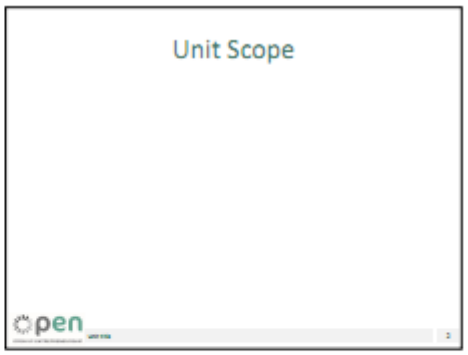
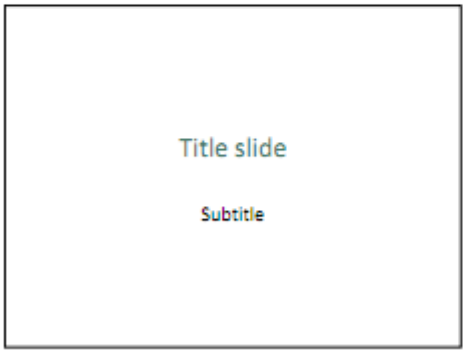
Funding

- This educational material is developed within the project "Open-up Entrepreneurship, OpEn", under the contract 2015-1-EL01-KA202-014168

- The OpEn project is funded by the Erasmus+ programme of the European Union.

7.4 Appendix IV: Slides Template for the Educational Material





Title and content slide 2

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Two-column slide 1

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Comparison slide 2

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Title only slide

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Guidelines

Guidelines (1 out of 4)

1. The slide template consists of specific layouts. Preferably choose one of the 9 predefined layouts.

Guidelines (2 out of 4)

2. Each slide should have a unique title.
3. Slide title should be bold 44pt and should not be bigger than 2 lines (when in 2 lines, the font size automatically becomes 40pt).
4. Preferably use the following font sizes: 32pt for the first level, 28pt for the second level, 24pt for the third, 22pt for the forth and 20pt for the fifth. Do not use smaller than 20pt as font size.
5. Choose theme fonts that are easier to be read and are commonly used at documents (e.g Arial, Verdana, Tahoma, Calibri)

Guidelines (3 out of 4)

6. Do not change title and text borders as far as it concerns their size and position.
7. Do not use change of colors to emphasize the words. Use bold instead.
8. It is preferable to use only 1 shape, chart, picture, photo per slide. Do not use shapes as a decoration, but only to clarify your content.
9. It is preferable to use no more than 6 bullets per slide. Slides with too much information should be splitted into seperate slides.

Guidelines (4 out of 4)

10. Do not use pictures or colored frames as a background beside your text. Prefer to use black frames with font size at least 2pt.
11. Do not use Text shadow for your text.
12. Do not use justify for your text paragraphs.
13. Links should take the user to relative content.
14. Use the auto-correct option form your language options.
15. At the slide show, the transition from one slide to another should be done by using "enter", "arrows", "clicks". No record time.

Basic Accessibility Guidelines

- All objects used (e.g. images, photos, shapes, charts) should have alternative text.
- Ensure that the automatic reading line in each slide is logical: text-to-speech option should "read" the title, text and alternative text objects in the order they were created and not in the order they appear on the slide.
- Check visibility for users with color blindness.
- Follow the specific instructions for scientific symbols, sound files and video clips.

End of unit

Funding

- This educational material is developed within the project "Open-up Entrepreneurship, OpEn", under the contract 2015-1-EL01-KA202-014188.
- The OpEn project is funded by the Erasmus+ programme of the European Union.
- *The European Commission support for the production of this material does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsi-ble for any use which may be made of the information contained therein.*

Erasmus+

Notes

Note on History of Published Version

The present work is the edition X.Y.Z.

The following editions have preceded:

- edition X1.Y1Z1 available here. (add the relative link at «here»).
- edition X2.Y2Z2 available here. (add the relative link at «here»).
- edition X3.Y3Z3 available here. (add the relative link at «here»).

Reference Notes

When citing an online source, citation should contain:

- the author or editor (if available),
- the title of the text (if different from the name of the website)
- the name of the website,
- the name of the site's sponsor or associated institution or organization,
- the date you accessed the site,
- the electronic address (URL).

For example, a short work posted on a website would be formatted in MLA style as follows:

McCort, Dennis. "Kafka and the Coincidence of Opposites." Romantic Circles Praxis Series: Romanticism and Buddhism. Feb. 2007. Romantic Circles. 21 Apr 2008 <www.rc.umd.edu/praxis/buddhism/mccort/mccort.html>.

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[1] http://creativecommons.org/licenses/by-nc-sa/4.0/

As Non-Commercial is defined the use that:

- Does not involve direct or indirect financial benefits from the use of the work for the distributor of the work and the license holder.
- Does not include financial transaction as a condition for the use or access to the work.
- Does not confer to the distributor and license holder of the work indirect financial benefit (e.g. advertisements) from the viewing of the work on website.

The copyright holder may give to the license holder a separate license to use the work for commercial use, if requested.

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Any reproduction or adaptation of the material should include:

- the Reference Note,
- the Licensing Note,
- the declaration of Notices Preservation,
- the Use of Third Parties Work Note (if available),

together with the accompanied URLs.

Note of use of third parties work(1/2)

This work makes use of the following works:

Pictures/Shapes/Charts/Photos

Picture 1: <reference><license> <link><source><...>

Picture 2: <reference><license> <link><source><...>

Picture 3: < reference ><license> <link><source><...>

Picture 5: < reference ><license> <link><source><...>

Picture 6: < reference ><license> <link><source><...>

Picture 7: < reference ><license> <link><source><...>

Note of use of third parties work(2/2)

This work makes use of the following works:

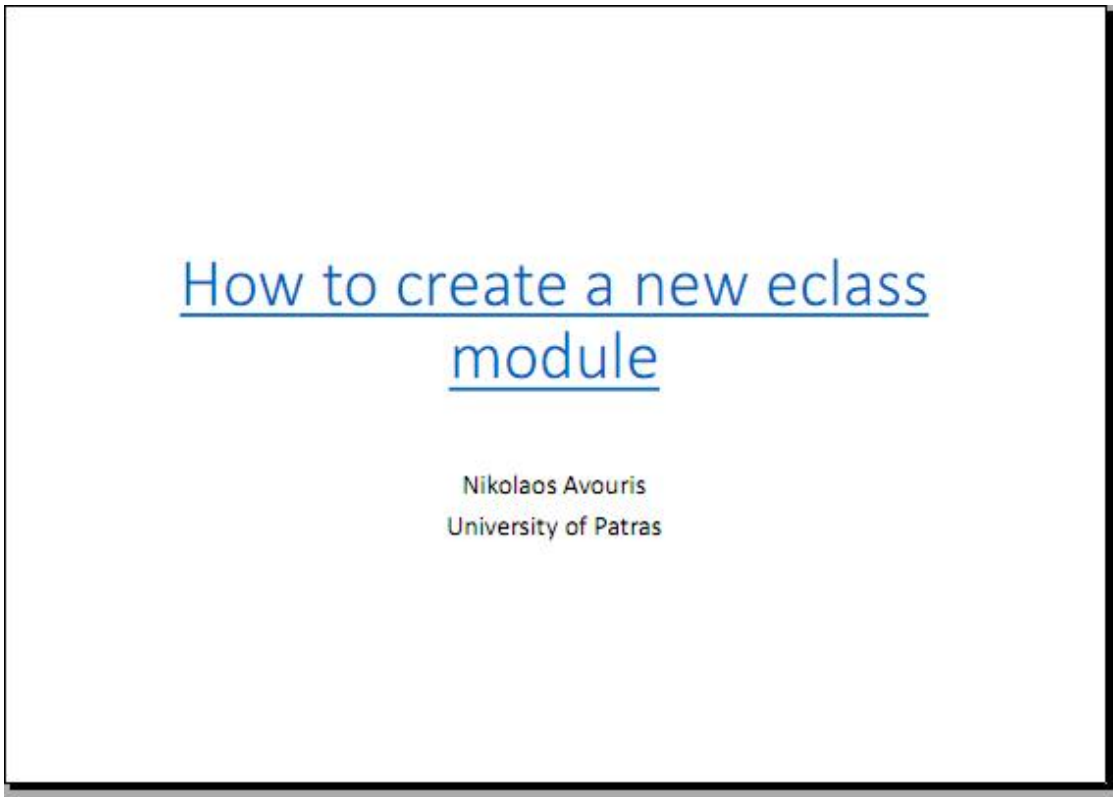
Tables

Table 1: < reference ><license> <link><source><...>

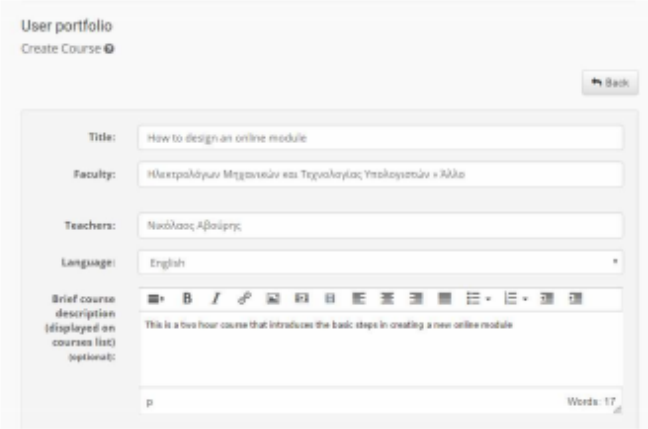
Table 2: < reference ><license> <link><source><...>

Table 3: < reference ><license> <link><source><...>

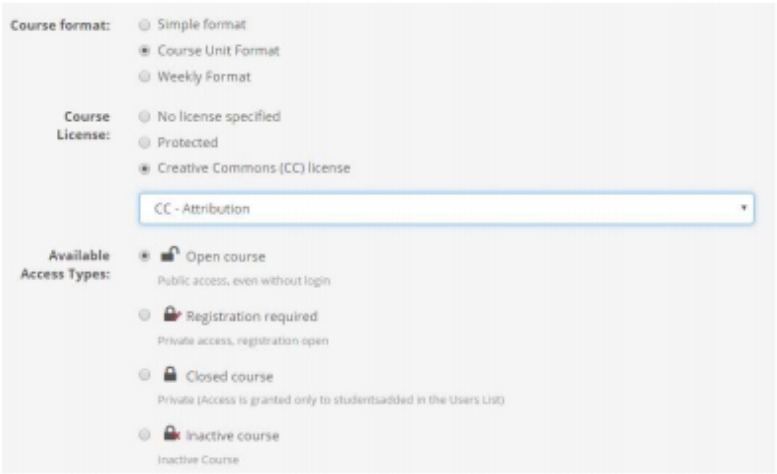
7.5 Appendix V: Eclass instructions for trainers



Create a course



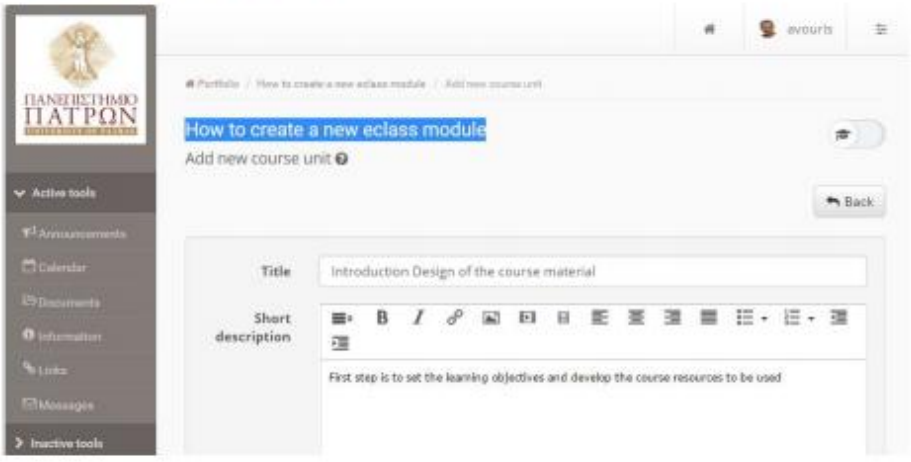
Define meta-data like access type



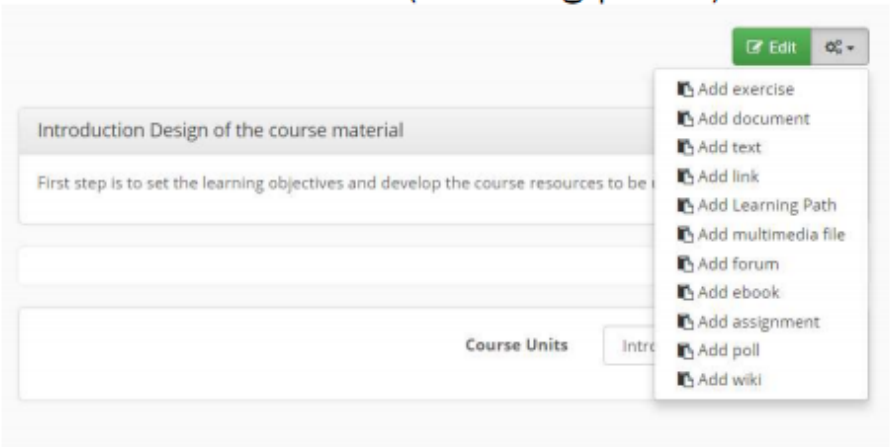
Add Structure: Course Units /Content/Learning Paths

- Here you can add content or resources to the selected course unit. The types of resources that can be added are listed next to the 'Add:' label. By clicking on 'Add', you can find resources of the selected type available in your course. Tick the ones you would like to add and click on 'Add selected'. Newly added resources are immediately listed, with edit and delete icons for each one. Please note that when multiple course units exist in a course, links to the next and previous unit appear automatically. You can also use the selection box to navigate directly to a specific unit.

Add course Units



Add content to units (learning paths)



Learning Paths

A Learning Path is a sequence of learning steps included in modules. It can be content-based (looking like a table of contents) or activities-based, looking like an agenda or a programme of what you need to do in order to understand and practice a certain knowledge or know-how.

In addition to being structured, a learning path can also be sequenced. This means that some steps will constitute pre-requisites for the steps after them ("you cannot go to step 2 before step 1"). Your sequence can only be suggestive (steps are displayed one after the other).

How to create your own Learning Path?

The first step is to access the Learning Path module. In the Learning Path entry page, you can select the *'Create a new learning path'* option in order to create as many Learning Paths as you like. In this way new Learning Paths are created, that are empty till you add modules and steps to them.

What are the steps for these paths? (What are the objects that can be added?)

Some of the Eclass tools, activities and contents that you consider to be useful and appropriate for your Learning Path can be added:

Separate documents (texts, pictures, Office docs, ...)

Labels

Links

Eclass Exercises

Eclass Course Description

Learning Path features

- Students can be asked to follow (read) your path in a given order. This means that for example students cannot go to Quiz 2 till they have read Document 1. All items have a status: completed or incomplete, so the progress of students is clearly available through the *Tracking* tool.
- If you modify the original title of a step, the new title will appear in the path, but the original title will not be deleted. So if you want test8.doc to appear as 'Final Exam' in the path, you do not have to rename the file, you can use the new title in the path. It is also useful to give new titles to links as they are too long.

Types of course material/ multimedia

Multimedia

You can upload multimedia files in several formats like mpeg, avi, flv, etc.

To add a multimedia file in your course, click on the 'Multimedia' tool on the left menu and then select the 'Add multimedia file' option. Browse your computer for the file to upload, type a title and optionally a description and click on 'File Upload'.

Select the 'Add video link' option to add video links to your courses. Type the link URL (file on the streaming server you want to add), the title and optionally a description and click on 'Add'.

Other course material/course items

1. Course Description (course_description), information on the course material, the teaching goals, educational activities, evaluation methods, etc.

2. Documents (document), course material stored, organized and presented. texts, presentations, pictures, diagrams, etc - through a folder and sub¬folder system.

3. Multimedia (video), ¬ audiovisual material. Either stored or as a link to a recourse stored in a Server or in Youtube, etc

4. Glossary (glossary), space for managing the terms contained in the course.

5. E-Book (ebook), a module for uploading and presenting electronic books

6. Links (link), useful web resources grouped together.

7. Agenda (agenda) in which basic course events (lectures, meetings, evaluations, etc) are presented in a chronological order.

8. Blog (blog) tool for maintaining a blog of the course

Eclass tools / evaluation

9. Assignments (work), a tool allowing the electronic management, submission and evaluation of a course assignments.

10. Self-evaluation exercises (exercises) created by the teacher aiming at students' practice on the course material. This module consolidates a multiple choice exercise generator, as well as text filling and matching exercises.

11. Questionnaires (questionnaire) are a module which offers the capability of creating polls and student profile surveys.

Eclass tools / communication, community building

12. Announcements (announcements) a mechanism to send messages about the course informing the registered users.

13. Drop box area (dropbox), for exchange of files between the teachers in charge and the course registered students.

14. Forums (forum) for exchange of opinions and ideas on issues about the course. It is a module of interaction between the teacher and the students.

15. Wiki (wiki), a system for course participants to collaborate on documents, allowing everyone to edit document pages while maintaining full history of changes.

16. Chat tool (conference) is a module which allows teacher and students to exchange text messages

---

Eclass tools / course structure

17. Unit view of the course(units) RECOMMENDED

18. Week view of the course (weeks)

19. Learning Path (learnPath) allows teachers to organise their educational material and students to follow a series of steps as learning activities. (SCORM)

Eclass tools / student group structure

20. User Groups - open or closed - (group) are a selection of registered users (students and teachers) who share the same conversation forum as well as the file and assignment submission area, and promote cooperation and interaction among students.

Eclass tools / administration

21. Administrator tool (Course_info)
22. User administration tool (user)
23. Course administration tools (course_tools)
24. Usage statistics (usage)
25. Gradebook (gradebook)
26. Attendance tool (attendance)
27. Course metadata (course_metadata)

Create course

- The Create Course Wizard is one of the most important tools of the platform. By using this, the user-teacher is able to create new courses in the platform and configure them.
  The wizard consists of 3 steps. Filling in every required field with an asterisk, is mandatory. Under each field, lie exemplary information to help the user filling them in.
  In case the user enters invalid data in a field, the system informs the user and prompts him to correct the error so as to be able to continue with the next step.
- To create a new course enter a title for the course, select the faculty from the selection list, enter the name of the course teacher, define the course type (undergraduate – postgraduate) and the course language. Click on 'Next Step' to continue.
- In the next page you can optionally type a brief description for the course or / and keywords and click on 'Next Step' to proceed.
- Select the course access type.
- **Open Course**. The course is publicly accessible without need of user authentication or login.
- **Registration required**. Users with an account in the platform can register to the course. It is possible to specify a course password to further limit access to only users who have this extra password.
- **Closed Course**. The course is accessible only to users already registered to it. The course administrator can add or remove users from the course.
- **Inactive course**. Access is allowed **only** to course teachers - administrators.
- .Select the modules you want to enable for your course and click on 'Create Course' to finish with the course creation.
- Please note that all information entered above can be modified at a later stage through the 'Course Administration' tool.

7.6 Appendix VI: Introduction to Creative Commons Licences

Creative Commons helps you legally share your knowledge and creativity to build a more equitable, accessible, and innovative world — unlocking the full potential of the internet to drive a new era of development, growth and productivity.

1. What is Creative Commons and what do you do?

Creative Commons is a global nonprofit organization that enables sharing and reuse of creativity and knowledge through the provision of free legal tools. Our legal tools help those who want to encourage reuse of their works by offering them for use under generous, standardized terms; those who want to make creative uses of works; and those who want to benefit from this symbiosis. Our vision is to help others realize the full potential of the internet. CC has affiliates all over the world who help ensure our licenses work internationally and who raise awareness of our work.

Although Creative Commons is best known for its licenses, our work extends beyond just providing copyright licenses. CC offers other legal and technical tools that also facilitate sharing and discovery of creative works, such as CC0, a public domain dedication for rights holders who wish to put their work into the public domain before the expiration of copyright, and the Public Domain Mark, a tool for marking a work that is in the worldwide public domain. Creative Commons licenses and tools were designed specifically to work with the web, which makes content that is offered under their terms easy to search for, discover, and use.

For more information about CC, visit the main website.

2. How do CC licenses operate?

CC licenses are operative only when applied to material in which a copyright exists, and even then only when a particular use would otherwise not be permitted by copyright. Note that the latest version of CC licenses also applies to rights similar to copyright, such as neighboring rights and sui generis database rights. Learn more about the scope of the licenses. This means that CC license terms and conditions are **not** triggered by uses permitted under any applicable exceptions and limitations to copyright, nor do license terms and conditions apply to elements of a licensed work that are in the public domain. This also means that CC licenses do not contractually impose restrictions on uses of a work where there is no underlying copyright. This feature (and others) distinguish CC licenses from some other open licenses like the ODbL and ODC-BY, both of which are intended to impose contractual conditions and restrictions on the reuse of databases in jurisdictions where there is no underlying copyright or sui generis database right.

All CC licenses are non-exclusive: creators and owners can enter into additional, different licensing arrangements for the same material at any time (often referred to as “dual-licensing” or “multi-licensing”). However, CC licenses are not revocable once granted unless there has been a breach, and even then the license is terminated only for the breaching licensee.

There are also videos and comics that offer visual descriptions of how CC licenses work.

3. What does "Some Rights Reserved" mean?

Copyright grants to creators a bundle of exclusive rights over their creative works, which generally include, at a minimum, the right to reproduce, distribute, display, and make adaptations. The phrase "All Rights Reserved" is often used by owners to indicate that they reserve all of the rights granted to them under the law. When copyright expires, the work enters the public domain, and the rights holder can no longer stop others from engaging in those activities under copyright, with the exception of moral rights reserved to creators in some jurisdictions. Creative Commons licenses offer creators a spectrum of choices between retaining all rights and relinquishing all rights (public domain), an approach we call "Some Rights Reserved."

4. The Licenses

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CC BY

This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of licenses offered. Recommended for maximum dissemination and use of licensed materials.

Attribution-ShareAlike
CC BY-SA

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This license lets others remix, tweak, and build upon your work non-commercially, as long as they credit you and license their new creations under the identical terms.

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CC BY-NC-ND

This license is the most restrictive of our six main licenses, only allowing others to download your works and share them with others as long as they credit you, but they can't change them in any way or use them commercially.

5. Directories of Open Educational Resources

- Fotos
  - Flickr (Http://Www.Flickr.Com/)
  - Fotopedia (Http://Www.Fotopedia.Com/)
  - Open ClipArt (Http://Openclipart.Org/)
  - Pixabay (Http://Pixabay.Com/)
  - MorgueFile (Http://Www.Morguefile.Com/)

- General OER
  - OER Commons (Http://Www.Oercommons.Org/)
  - DOAJ – Directory Of Open Access Journals (Http://Www.Doaj.Org/)
  - Europeana (Http://Www.Europeana.Eu)
  - OpenTapestry (Http://Www.Opentapestry.Com/Courses)
  - National Digital Learning Resources (Http://Www.Ndlr.Ie/)
  - The Khan Academy (Https://Www.Khanacademy.Org/)

7.7 Appendix VII: Guidelines for Multimedia content creation

In this appendix, the Center of Learning Technologies of the University of Patras contributes a set of guidelines for producing multimedia content.

Video is an important part of online courses. It is an effective way of engaging students and supporting their understanding. It is integrated as part of traditional courses, serves as a cornerstone of many blended courses, and is often the main information delivery mechanism in MOOCs. In order for video to serve as a productive part of a learning experience it must integrate principles of both subjects (learning and video production), creating a new cluster medium. Understanding the principles of this new medium will help you maximize the value of your deliverable material. Some effective practices for producing such a material are presented below.

- **Signaling**, which is also known as cueing, is the use of on-screen text or symbols to highlight key information. For example, signaling may be provided by the appearance key words, color changing or a symbol that draws attention to a region of the screen.

Image 1: Examples of signaling (Machining Technology II - Design of Manufacturing Systems[30], Kant: moral philosophy - The virtuous will[31])

- **Segmenting** is the chunking of information by making shorter video or tag dynamically the deferent chapters of the video so it can be skipped forward/backward, to allow learners to engage with small pieces of new information as well as to give them control over the flow of new information.

- **Weeding** is the exemption of interesting but extraneous information from the video that does not contribute to the learning goal, such as music, complex backgrounds, too much signaling and texting. Such information can be used as an engaging and supplementary information to achieve a storytelling but not in a way that is going to destruct the learners. Total exception of such material will lead to an unwanted “talking heads” approach.

30 http://delos.upnet.gr/opendelos/player?rid=4af75bad

31 http://delos.upnet.gr/opendelos/player?rid=5f81fb32

- **Match modality.** Mix deferent video styles and alter the style of format to maintain curiosity and find ways to hook learners. Combining both the audio/verbal channel and the visual/pictorial channel to convey new information, increasingly learners engagement and retention.
- **Make short videos.** By keeping your videos length shorter than 9 minutes you increase the engagement and students tend to watch them until the end.
- **Be specific.** Have a really detailed idea of what your message is. Divide your subject in four main categories, establishing, delivering, exploring and concluding. Try not to speechify, be clear and to the point. It will increase student engagement and retention.
- **Use a conversational style**. The use of conversational rather than formal language and style encourages students to develop sense of social partnership with the narrator that leads to greater engagement.
- **Speak clear, relatively quickly and with enthusiasm**, due to increase the student engagement and interest. Do not speak slowly in order to avoid the chance student miss something, student can go back and see again the missing part. Keep the flow steady and relative quick.
- **Increase the storytelling.** Make the video part of what you are telling. Filming at locations connected with your subject. Present true case scenarios. It will increase the engagement and curiosity of student.

Image 2: Location filming using deferent video styles (Instrumental Analysis II, Fluorescence[32])

[32] http://delos.upnet.gr/opendelos/player?rid=719a19f6

- **Make sure the material *feels* like it is for *these* students in *this* class.** One of the benefits for instructors in creating educational videos is the ability to reuse them for other classes and other semesters. When reusing videos, it's important to package them with text outside the video to contextualize them for the particular class for which they are being used. It will promote engagement and will create a more "personalized" bond with the student.

- **Script your video.** Have a really detailed idea of what your message is and what you want to include in your video, from learning prospective down to clothing, props, environment and angles. Write a "script" so that the others involved in the lesson/filming will also know what you want to do.

- **Pilot your project.** Know about faults and weaknesses in a pilot, so to make sure that will not raise in the final project. Imagine yourself as a target user and actually walk through all the steps you would do as a target user, in as close to the actual environment as possible and evaluate if the message is delivered.

For achieving the preferable outcome you have to get familiar with the medium. Get familiar with cameras, microphones and lighting. If you want to shoot yourself a lesson, the most practical solution, ensuring acceptable quality, is the use of a portable high definition video camera or a high definition photo camera with video recording ability. Their advantage is the quality of the video feature, shooting at the preferable 1920x1080 or 1280x720 resolution, using SD cards as storage medium, having audio inputs to connect with microphones and audio outputs to monitor the sound. To achieve stable footage and simultaneously good shooting position you should use a tripod that is compatible with the camera. The tripod must have stability control modes, a minimum height of 1.5 meters and ergonomic ways of handling and operating the camera. One of the most important and sensitive issue is to reassure the audio quality using a suitable microphone. If you are using a wired microphone it must be a "condenser" mic with a "super-cardioid" polar diagram. Furthermore, it is necessary to position it near and in front of the speakers in order to capture accurately the direct sound, and not environmental reflections. It is highly recommended to use a wireless clip-on microphone. This solution is ideal when the speaker moves in space. A disadvantage is that these microphones are sensitive to mobile devices.

When making a video there are many factors which must be given sufficient attention so that the end result is satisfactory. These factors are related not only with choosing the right equipment, there are also some minor details that play big role to the value of our material. A good video requires the study of the following elements, audio, picture and lighting

Audio

Avoid using the built-in microphone due to its likely poor quality. Avoid having people talking and moving while the recording because microphones are sensitive to the slightest noise and whisper. In case of using the built-in microphone or a gun microphone, avoid being near projective device, air conditioner or UPS

with fan, because the microphone is likely to record them. Also, avoid being near open windows or doors and always monitor your sound to avoid any clipping. Speakers must talk loud, clear and avoid volume fluctuations.

Picture

It is preferable to set the camcorder at the highest picture quality that can conceive. This will give greater postproduction processing capabilities. The camera lens should be always clean. Know your cameras maximum recording capacity and the free space on the storage medium. White balance your camera right before shooting in order to achieve accurate colors. If there has been no white balance when shooting, it is possible to correct colors later in the post-processing stage. Focus the camera on your subject manually, if possible, and avoid the auto-focus option. Set the light sensitivity (ISOs) of your camera manually, if possible, so that your subject is well lighten and avoid auto-light sensitivity option. Frame your subject

Lighting

Today's camcorders have quite sensitive sensors thus performing well in low light situations. Nevertheless, if the location of filming is highly illuminated, will lead to a fairly good result. You must avoid having a source of light across the cameras lens. This will lead to deterioration of image quality. Avoid great contrast and lighting differences in your frame such as computer screens and slide projectors. If it is a necessity, try to eliminate those differences. To avoid unwanted glare close the windows and use good quality interior lighting. Ideally you can use a light source facing the speaker with a slight angle.

Directing Topics

The position of elements that compose the image plays key role in filming. The camera, the source of light, the speaker, the furniture and the background behind the speaker are factors that affect the quality of video recording and so they must be taken into account.

If you are used to move your hands a lot while you are speaking, or walking around talking, consider reducing that mobility. By doing it you are distracting your student attention and not helping the engagement. Be enthusiast about your subject but not over react. Speak clear without interruptions and address directly at the camera. Keep in mind to avoid framing too much dead space around your, keep your framing contested. If you are using the signaling method at your videos try to fill the half of the image, giving space for the signals to pop up. Whether the speaker is sitting or standing the area around him must be clean and simple so as not to distract the viewer. The background should not be either very simple or very complex. Speaker should not stand near surfaces that reflect light so as to avoid optical aberrations. If the speaker is moving around an area, be sure that the cameras frame cover the whole of the area, or at least much of it, in order to avoid continually moving the camera to follow the speaker. Too much camera movement will cause distraction of your student attention and not help the engagement. The framing must be between medium and close up, depending on the situation, in order to record facial expressions and any movements of hands. This will help storytelling and student engage with the speaker. Shaky footage and continues reframing of the subject should be avoided because it is leading to distraction of your student attention. If you are using more than one camera, consider placing them at deferent angles and framings, but not breaking the 180^{o} rule. This will enchase your storytelling and student interest.

Image 3: Dual camera set up (Kant: moral philosophy, The virtuous will[33])

For creating your final video material you have to get familiar with a video editing program. The procedure is relatively easy with tons of tutorials online. This will give you control over the recorded material, letting you edit your videos, make transitions between scenes, correct color, lighting and sound. Screen capturing programs might come handy allowing you to make a video of what's happening on your screen. To broaden the accessibility of your final product you have to consider subtitling it. Depending on the educational platform used, it may give you the possibility creating the subtitles in the platform or embed them. Find the videos technical specifications of the platform that your material is going to be embedded. That will make you determine the type of your video encoding. The mostly used container format is MPEG-4 (.mp4), compression encoding format H.264, resolution 1280x720 at 25 frames per second (fps). Keep in mind that your material is going to be streamed so try to keep your final deliverable files light.

Filming and editing are relatively simple processes with controlled results, if you have the right equipment, follow basic instructions and allocate time for tests to obtain the minimum experience required.

[33] http://delos.upnet.gr/opendelos/player?rid=5f81fb32