BLUES

EUROPEAN ENTREPRENEURSHIP EXPERIENCE

“BLUES Blended-learning Methodology”

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CONTENT*

1

INTRODUCTION*

This methodology review is a part of the **BLUES - Blended-Learning International Entrepreneurship Skills project** (a European blended learning programme on entrepreneurial skills for university students) that aims to design, test and disseminate an innovative international blended-learning entrepreneurship education methodology that increases the quality and relevance of students´ entrepreneurial skills and promotes internationalisation, innovation and creativity through a transdisciplinary approach and the active involvement of the regional business sectors.

In this publication we describe main face-to-face and blended learning teaching methods and approaches and evaluate them from the perspective of our entrepreneurship education program. The Blues programme builds on an inherent connection between the Massive-Open-Online Course (MOOC) and Face-to-Face learning contents. In this context it is essential to refer to it as a blended learning methodology that should be complemented by pedagogues by the implementation of both tools, digital and face-to-face sessions.

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2

ENTREPRENEURSHIP EDUCATION AND ITS **TEACHING METHODS***

2.1 ENTREPRENEURSHIP IN UNIVERSITIES*

Entrepreneurship has become an important movement in universities and the amount of entrepreneurship education (EE) has increased globally (Kuratko 2017). The field of entrepreneurship education (EE) has evolved over the last 40 years. Although still on-going debate whether entrepreneurs are born or created, the mainstream has agreed that entrepreneurship can be taught (see e.g., Garavan and O'Cinneide 1994ab; Gorman et al. 1997; Henry et al. 2005ab; Rae 2000). Consequently, EE has expanded from single courses to programmes designed specifically to entrepreneurship students, also beyond the university business schools to reach larger and more versatile university student populations (Kuratko 2017).

In his analysis on the contents of EE syllabi, Fiet (2001a) noted a wide divergence in topics, and possible causes for this divergence, which seem to be characteristic of a developing academic discipline. The wide array of programmes and courses reflect the many-sides of entrepreneurship as a scientific field. Today, entrepreneurship does not only refer to founding and/or managing a venture (Carland et al. 1984; Gartner 1988; Hisrich and Peters 1989; Low and MacMillan 1988); entrepreneurship can be understood in its broadest form as a transversal competence, which can be applied by citizens to all spheres of life. It begins by from nurturing personal development, to actively participating in society, to (re)entering the job market as an employee or as a self-employed person, and, finally, to starting up ventures (cultural, social or commercial). (Bacigalupo et al. 2016). Accordingly, competences associated with entrepreneurship include different kinds of areas such as 1) in the area of ideas and opportunities: spotting opportunities; creativity; vision; valuing ideas; ethical and sustainable thinking, 2) in the area of resources: self-awareness and self-efficacy; motivation and perseverance; mobilizing resources; financial and economic literacy; mobilizing others; and 3) and in the area of taking action: taking the initiative; planning and management; coping with uncertainty, ambiguity and risk; working with others; learning through experience.

When applying a wide definition of entrepreneurship, EE can be defined as the application of enterprise behaviours, attributes and competencies into the creation of cultural, social or economic value. EE help developing a »can-do« confidence, a creative questioning approach, and a willingness to take risks, enabling individuals to manage workplace uncertainty and flexible working patterns and careers. It aims to build upon the enterprising competencies of students who are capable of identifying opportunities and developing ventures, through becoming self-employed, setting up new businesses or developing and growing part of an existing venture. (QAA, 2018).

Several studies have shown many benefits for university students in attending EE. For example, a research by Kirkwood, Dwyer and Gray (2014) studied the entrepreneurial students' reflections of the EE and found that the main benefits that students gained are increased confidence, insights into the feasibility of their new venture idea, entrepreneurship knowledge and skills, an appreciation of what it is like to be an entrepreneur, and solutions to practical problems. In addition, few students appeared to appreciate the long-term benefits of networking with visiting entrepreneurs, guest speakers, lecturers, and fellow students. Other studies have found that EE can influence personal

growth, confidence and identity development, new career intentions and learning applications (Rae & Woodier-Harris, 2013).

2.2 ENTREPRENEURSHIP TEACHING METHODS*

When determining the appropriate teaching and learning methods in EE, the respective learning objectives must be taken in account. Jamieson (1984) has classified the goals of entrepreneurship education into three categories: **(1) education about entrepreneurship** (enlightenment of students on entrepreneurial procedures and features of entrepreneurship), **(2) education for entrepreneurship** (exposure of student to creation of ventures they can lay claim to) and **(3) education in enterprise** (practical exposure of participants to their own ventures). Most often, entrepreneurship is taught in universities via formal lectures, case studies and business plans (Solomon 2007) that reflect goals in the "about" category. Approaches that utilise traditional reaching methods or rely heavily on lectures can be considered traditional (Mwasalwiba 2010). The main characteristics of traditional teaching methods are that they are teacher centered (teacher is the only expert, authority) and whereas students have passive roles. Usually, written texts are used for learning, less formative evaluation is present, and mistakes are usually discouraged. During the past decades, however, more innovative teaching methods have emerged to involve the participation of both the students and the teacher and to enable learning "for" and "in" entrepreneurship.

According to Bennett (2006) innovative methods in EE involve the teacher to encourage learning and students to build and develop their own abilities, knowledge and attitudes through experiential learning. Particularly, students should gain their entrepreneurial competencies through practice and "learning by doing" (Cope & Watts, 2000). These methods encourage more active student participation in learning and reflection of their own experiences (Cope, 2005). In this process, students learn collaboratively, discuss ideas, and are involved in problem-solving situations through informal and authentic learning environments. In educational psychology these teaching strategies are known as student-centred, that have many positive impacts on student's engagement, intrinsic motivation, learning strategy use and learning outcomes.

Among innovative teaching methods can be included: computer simulation of business games, role play, business plan development, personal and group projects, visitation to entrepreneurs, new business creation, workshops, group discussions, case study (Mwasalwiba, 2010) and design thinking (Zupan, 2015). Although many of these methods have been found useful in reaching the course learning objectives, they are not always applied in universities, because they can be expensive and may not yet be in conformity with the university curricula (Mwasalwiba, 2010).

In addition to face-to-face teaching, many authors have also proposed different kinds of e-education methodologies to be applied in EE. For example, Sousa et al. (2018, in press) recommend 1) business plan (project based learning; problem based-learning; digital stories; online learning environments; technology integrated teaching methods; digital storytelling; educational games; active learning); 2) choice and structuring of the idea for the enterprise (collaborative communities; cooperative learning; network participation); 3) pilot project of the entrepreneurial idea (augmented reality; web-based video; gamification; simulation); 4) market and product analysis (web-based video; narrated stop-motion animation; generic modelling language; digital video; augmented reality; gamification; simulation; webinars); 5) achieving sustainability of entrepreneurial idea (collaborative communities; cooperative learning; collaborative learning; network participation; 6) evaluation of entrepreneurial skills and characteristics (flipped classroom using digital media; cooperative learning; collaborative learning; moving from fixing to online space; experiential online development; open educational practice; online learning environments; technology educational practice; digital storytelling; educational games; active learning).

Garbuio et al. (2018) made a review of key approaches in the field of entrepreneurship education that are summarized in Table 2.1. According to the authors EE was initially shaped by the planning school, where opportunities are developed through business plan development and systematic search to lean start-up approach that encourages entrepreneurs to focus on experimenting and getting feedback from potential customers for the next development iteration, rather than following a rigid business plan (Garbuio et al., 2018).

TABLE 2.1. *Summary of key entrepreneurship education approaches*

APPROACH AND MAIN REFERENCES	APPROACH TO TEACHING AND LEARNING
BUSINESS PLAN DEVELOPMENT: (Barringer, 2009; Honig, 2004; Kaplan &Warren, 2009; Kuratko, 2003). The systematic analysis and business plan are used to collect information that helps entrepreneurs make decisions in highly complex and uncertain environments.	• Teach and monitor production of business plans internally or via jury • Usually done in groups where individuals split tasks and produce a report
CONTINGENCY PLANNING: (Abetti & Phan, 2004; Gruber, 2007; Honig, 2004). Adaptive business planning that accounts for environmental factors. In highly dynamic environments, only specific activities are planned to speed up the starting up process, while in slow environments, in-depth planning is preferred.	• Taught as unrelated modules • Similar to approach used to train medical interns who follow an expert and make diagnoses
EFFECTUAL ENTREPRENEURSHIP: (Dew, Read, Sarasvathy, & Wiltbank, 2009; Sarasvathy, 2001). Entrepreneurs do not start with concrete goals but constantly develop them on the fly through personal strengths and available resources.	• Use cases and guided discussions to help students adopt and practice an entrepreneurial mind-set • Focus on differences in framing between expert entrepreneurs who redefine the frame to look for new solutions (effectual) and novices who accept the frame and look for opportunities within it • Analogical reasoning allows students to go beyond data
PROCESS PERSPECTIVE: (Aulet, 2013; Baron, 2006; Hjorth & Johannisson, 2007). Entrepreneurial process begins with opportunity recognition; can be learned; and entrepreneurs can be trained to better recognize opportunities.	• Focus on a process that unfolds over time, with each stage requiring different knowledge and skills • Opportunity identification taught through classic strategy tools (e.g., market segmentation, end user profile) and cognitive framework • Focus on training entrepreneurs when to direct their attention and on the process of searching for patterns
OPPORTUNITY-CENTERED LEARNING: (Rae, 2003). Exploration and development of an opportunity through individual and group investigation, understanding, selecting, and acting on an opportunity.	• Students to explore the opportunity (through brainstorming, use of Post-It notes, and directed creativity); relate the opportunity to personal goals, plan to realize the opportunity, and act to make the opportunity happen • Use of exploratory questions and a short case to illustrate an entrepreneurial learning process
LEAN STARTUP APPROACH: (Blank, 2013; Ries, 2011). Hypothesis-driven approach that focuses on experimenting rather than planning. Directly engaging with customers through a minimum viable product, built iteratively and incrementally, according to customer feedback.	• Often uses graphical representation of business models, i.e., lean canvas (Maurya, 2012) or business model canvas (Osterwalder & Pigneur, 2010), to develop testable hypotheses • Engage in a dialogue with customers about product development (agile development) instead of forecasting financial return

Neck and Greene (2011) argue that entrepreneurs "think and to some extent act like designers" (p. 65), emphasizing alignment as they differ and converge to identify and then see what occurs in response to a problem. This entails skills in "observation, synthesis, searching and generating alternatives, critical thinking, feedback, visual representation, creativity, problem-solving and value creation" (Ibid, p. 65) – a complex set of skills that teacher should develop.

Furthermore according to Huq and Gilbert (2017), the motivation for innovating teaching processes are supported by design thinking was drawn from the following five key questions:

1. An entrepreneurship education course should have a clear objective at the micro (participant) and macro (organization, society) level – the why?
2. An entrepreneurship education course should be designed around a thorough understanding of the profile and background of the participants – for whom?
3. An entrepreneurship education course should identify relevant evaluation criteria in line with the course objectives and the participant characteristics – for which results?
4. The content of an entrepreneurship education course should be explicitly designed around five knowledge dimensions – know-what, know-how, know-who, know-why and know-when – the what?
5. The choice of pedagogical methods for each entrepreneurship education course should be based on the objectives, contents and constraints imposed by the institutional context – the how? (Huq & Gilbert, 2018, p. 158).

Neck, Greene and Brush (2014) state that EE is a method versus a process and have developed a practice-based approach where they advocate teaching entrepreneurship using a portfolio of practices, which includes play, empathy, creation, experimentation, and reflection with the aim to help students develop the competency to think and act entrepreneurially in order to create, find, and exploit different opportunities. Neck and Greene (2011) view EE as a method in that it is a set of practices compared to a process that has known inputs and practiced output.

2.3 BLENDED LEARNING AS A TEACHING METHOD*

Blended learning is a combination of two different learning systems, namely the traditional learning system that has been in use for centuries and the distribution learning system, which has begun to expand the memory of new technologies for the distribution of communication and interaction (Bernard, Borokhovski, Schmid, Tamim, & Abrami, 2014; Moskal, Dziuban, & Hartman, 2013). In addition it consists of virtual environments (Powell, 2015) that is facilitated by using internet based technology and tools e.g. forums, chats etc. (Heinze & Procter, 2004, p. 1).

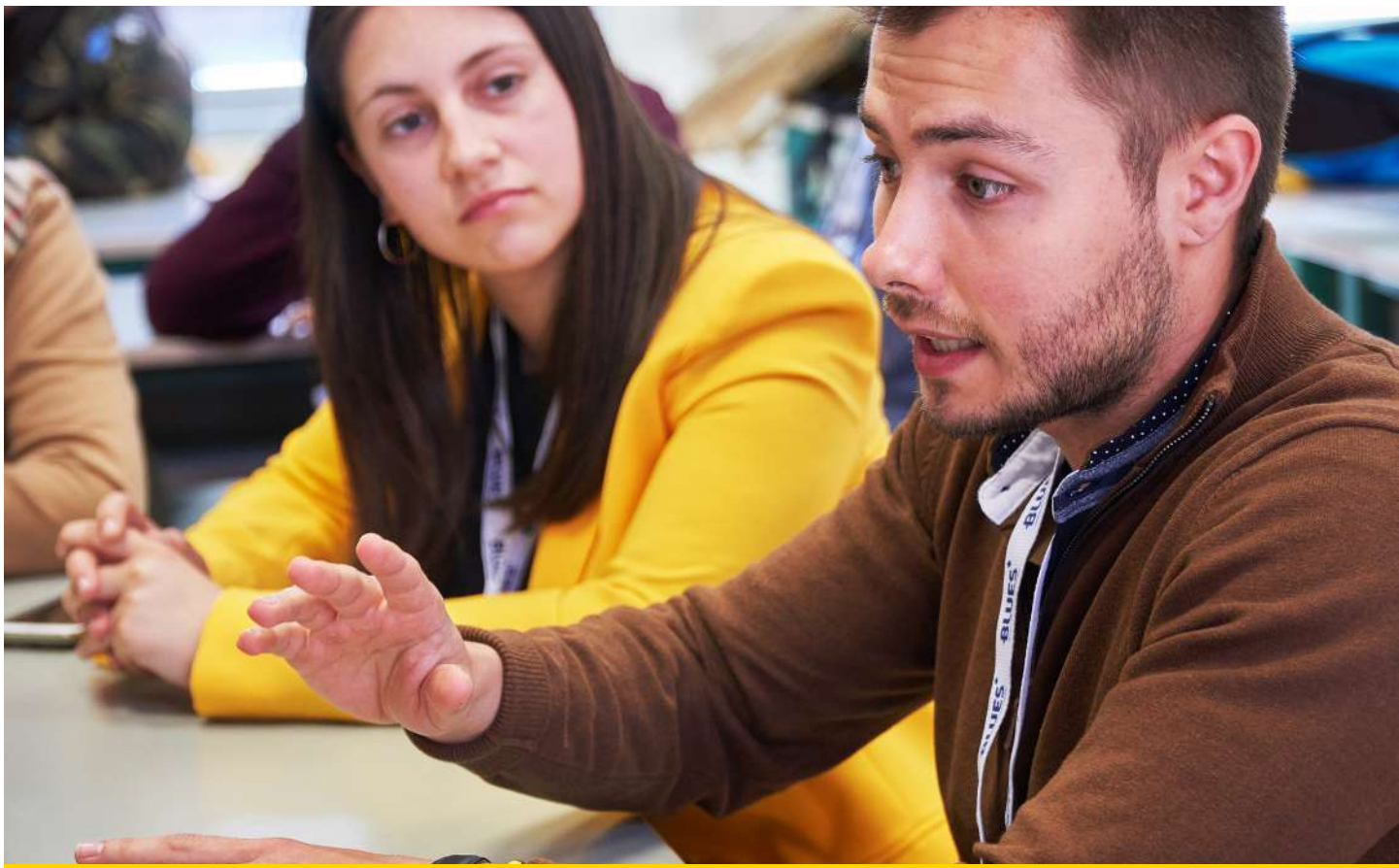
Blended learning in this report follows Powell (2015) and is defined as a hybrid learning model that "combines the best features of traditional schooling with the advantages of online learning to deliver personalized, differentiated instruction across a group of learners. Students in formal blended learning educational programs learn online part of the time yet have the benefit of face-to-face instruction and supervision to maximize their learning and to best fit their own needs." (ibid. 2015, p. 5)

Blended learning could indeed be classified as an "innovative teaching method", as its purpose is to improve the quality of learning outcomes through a combination of different "face-to-face" and "online" teaching strategies.

Numerous higher education institutions use blended learning approaches as a preferred approach because of many advantages of such approaches, e.g. cost, economics, enhancing meaningful educational experiences, effective use of resources etc. Blended learning approaches suggests that e-learning—as a central part of these approaches—will be the most effective when it is part of an overall strategy involving classroom and workplace learning.

Applying blended learning approach to teaching include multiple methods and teaching strategies and is carried out as a mixture of classroom and online learning. Some authors take a broader view with focusing more on a communications component and stressing that learning that is facilitated by "...the effective combination of different modes of delivery, models of teaching and styles of learning" is based on a transparent communication amongst all parties involved in a course, which achieved through different tools, e.g. forums, chats etc. (Heinze & Procter, 2004, p. 1).

In the following chapters we describe some of the most common blended learning approaches in education.



3

BLENDED LEARNING **APPROACHES***

In a report that was released by the **International Association for K-12 Online Learning (iNACOL)** the development of blended learning from 2008-2015 is described and its future in education is predicted (Powell et al., 2015). Authors note that in recent years blended learning has been adapted by teachers at all levels of education to represent the connected world in which they and their students live. Web-based content and resources in schools are increasingly supplementing traditional textbooks. Teachers are increasingly using tools that enable more effective communication with students and gives them the opportunity to provide real-time feedback. Collaborative learning, which in pedagogical practice has become an important way of working with students, moves away from school walls into virtual environments (Powell et al., 2015).

Norberg and colleagues (2011, p. 207) describe blended learning approaches as the "new normal", since this approach is so widely adopted in higher education. According to the 2017 New Media Consortium Horizon Report blended learning approaches are one of the main forces that drive technology adoption in higher education (Adams Becker et al., 2017). Blended learning is also listed as one of the key issues in teaching and learning in the EDUCAUSE Learning Initiative's (ELI) 2018 annual survey of higher education (EDUCAUSE, 2018). More than 900 community members voted, and according to EDUCAUSE these key issues are the focal points for the expert community discussions in the coming year.

Gerbic (2011) claims that blended learning is often associated with pedagogical innovation, such as the development of reflective practice of students, promoting international collaboration amongst students, and its transformative potential. Vaughan et al. (2013) argue that blended learning can transform traditional higher education by building Communities of Inquiry and developing higher order thinking (Vaughan, Cleveland-Innes, & Garrison, 2013). In a report by Joint Information Systems Committee (JISC) called Effective Practice in a Digital Age ten case studies are presented that describe ways in which technology-enhanced learning was transforming practice (Joint Information Systems Committee (JISC), 2009).

Blended learning, Mixed Learning, Hybrid Learning are terms that indicate a learning method that combines traditional face-to-face learning and distribution learning, which is characterized by the involvement of different technologies. Blended learning has become a very popular term in recent years and a method that has started to be widely used, but blended learning has existed for a long time. What makes the operation of blended learning possible is technology that allows interpersonal interaction. Even more significant is the fact that this interaction is happening in real time.

Blended learning defines the use of more than one teaching method and combining them. One of the most general definitions of blended learning comes from Graham (2006): "Blended learning systems combine face-to-face instruction with computer-mediated instruction" (Graham, 2006, p. 5). The concept of blended learning (Figure 2.1) is about merging traditional learning and e-learning (Bernard et al., 2014; Moskal et al., 2013). Blended learning is a combination of different content delivery models, different teaching models and different teaching styles (Graham, 2013). It can be done by combining learning in classroom and online instruction, combining e-learning and facilitating access to teachers, combining learning at work with informal meetings (Bersin, 2004). Simply put, blended learning is a combination of multimedia technologies, virtual classrooms, voice mail, e-mail, conference calls, animations and video transmissions with a traditional way of learning in the classroom and face-to-face learning (Thorne, 2003).

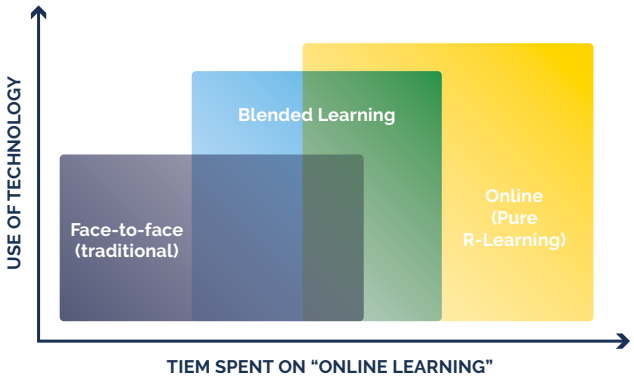


Fig. 2.1 Blended learning concept

(Source: http://hlwiki.slais.ubc.ca/index.php/Blended_learning)

Today, there are many options for using blended learning. Various online seminars and learning units, simulations, books, etc. are available, which anyone can access anywhere, anytime. There are also various live collaboration options with various live videos, video conferencing, calls, and other online exercises. In the next chapter we will look at some of the most used blended learning models in the higher education.

3.1 BLENDED LEARNING MODELS OF TEACHING*

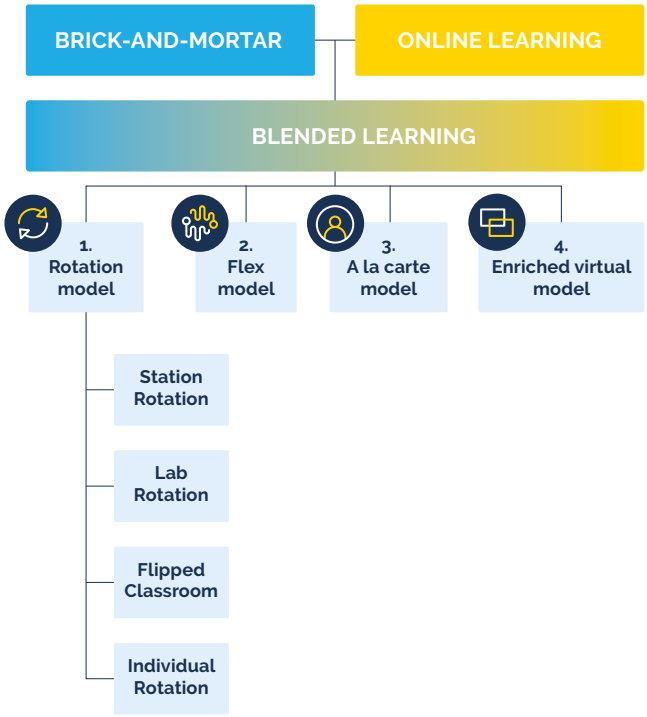


Fig. 3.1 Blended learning models (Horn & Staker, 2014, p. 38)

Horn and Staker (2014) described four main models of blended learning: Rotation, Flex, A La Carte, and Enriched Virtual. Figure 3.1 diagrams the relationships among these terms. In many cases schools use multiple models and combine them in different ways to create a custom program. The purpose of these terms is to provide a language to describe the basic building blocks of the various combinations. The following sections describe each of these models and paint a picture of what they can look like in practice.

3.1.1 ROTATION MODEL

In Rotation, there is a rotation between face-to-face and online learning. The classical part of teaching takes place in the classroom, according to a predetermined schedule. Students perform the second part of teaching by themselves, by learning the content on the web platforms. The teacher is the one who is responsible for supervising students or their work, which they perform online (Horn & Staker, 2014). This model is the most "traditional" and "non-disruptive" among models of blended learning, since the idea of rotating among stations is not new to education. The only innovation here is that online learning is now part of the cycle. This model has several "sub-models" that emphasize certain aspect of learning situations: Station Rotation, Lab Rotation, Flipped Classroom, and Individual Rotation.

In "Station Rotation", rotation takes place within a classroom or set of classrooms. Horne give presents the example of this model a "classic" Scholastic's READ 180 program that started in 1998.

In the "READ 180" system teachers begin and end each class session with a whole-group discussion that engages the entire class. In between, students break into groups and rotate through three stations:

1. **Small-group direct instruction**, in which the teacher uses resource books and works closely with individual students.
2. **Individual learning**, using READ 180 software to practice reading skills.
3. **Modelled and independent reading**, in which students use READ 180 paperbacks or audio books (Horn & Staker, 2014, p. 39).

Station Rotation model proved to be very successful in practice. According to the research summary done by U.S. Regional Educational Laboratory (Brodersen & Melluso, 2017) the "READ 180" programme has resulted in an average gain of 12 percentile points for reading achievement and 4 points for reading comprehension among learners. There are also a lot of examples of this model available online. Many of them can be seen on the "Blended Learning Universe [BLU]" (available at www.blendedlearning.org), a searchable database of blended learning programs available around the world.

Other sub-models are variation of the base model. Lab Rotation is like Station Rotation, but students walk to a computer lab for the online-learning portion of the course. In Flipped Classroom model students listen or watch online lessons or lectures independently (at home or on campus) and is in recent years gaining in popularity (Bergmann & Sams, 2012). Time in the classroom, that was previously intended for lectures, is in Flipped Classroom model spent on some group work or experiential activities. The fourth Rotation model is called Individual Rotation. In an Individual Rotation, students rotate on an individually customized schedule among learning modalities, that were set by a teacher. Individual Rotations are different from the other rotation models because students do not necessarily rotate to each available station or modality; their daily schedules are customized according to their individual needs.

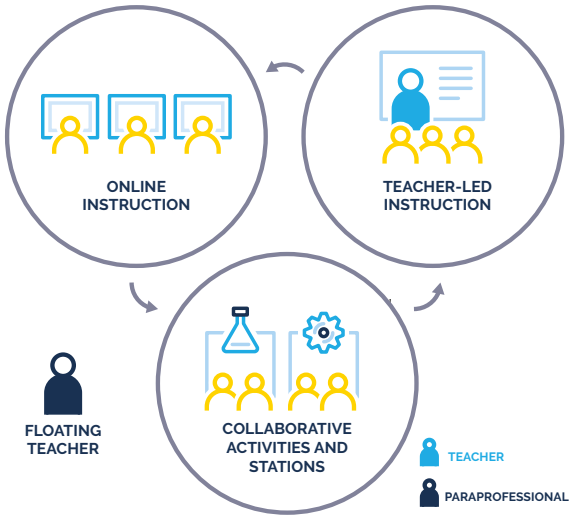


Fig. 3.2 Station Rotation Model
(Source: http://www.blendedlearning.org/model)

3.1.2 FLEX MODEL

The main characteristic of Flex models is that is based on online learning, although many activities can take place off-line. Students choose their mode of learning according to their individual needs. The teacher is always accessible and is present in the classroom, when students need help. They also moderate and facilitate project work.

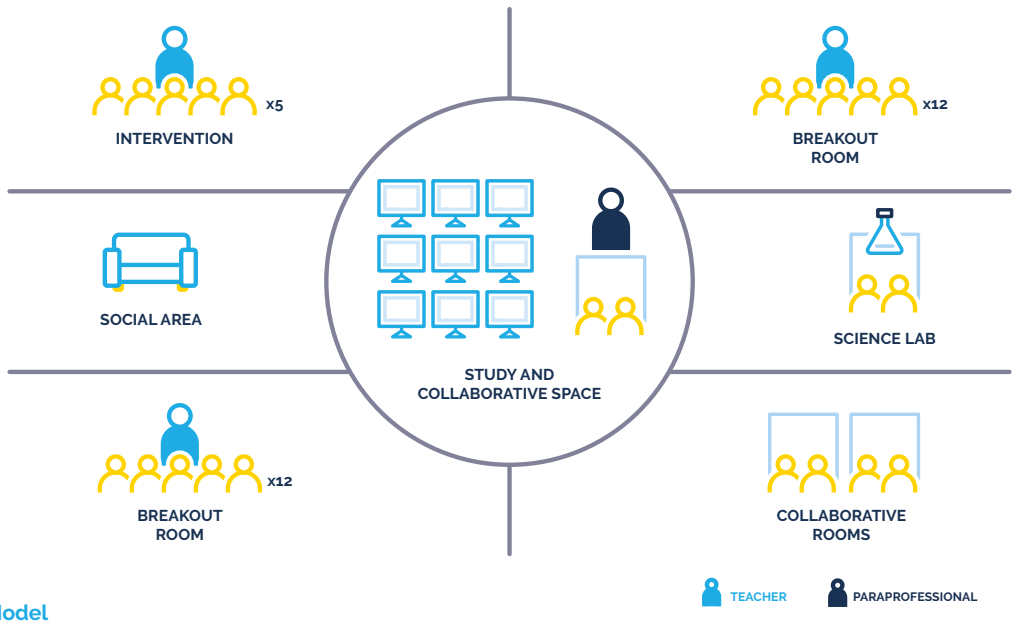


Fig. 3.3 Flex Model
(Source: http://www.blendedlearning.org/model)

According to Tom Vander Ark, major differences between Rotation and Flex models are: "...rotation schools add some online learning to what otherwise may look like a traditional school while flex schools start with online learning and add physical supports and connections where valuable. As a result, the potential for innovation is higher in flex schools" (Vander Ark, 2012).

3.1.3 A LA CARTE MODEL

According to Horne and Staker (2014), A La Carte model is the most common form of blended learning at the high school level. This model allows students to take one or more courses online if these subjects are not included in the regular curriculum of the brick-and-mortar school. This part of the curriculum is always carried out remotely from the faculty. The part that is included in the curriculum of each study is carried out in a traditional way within the institution (See Figure 5).

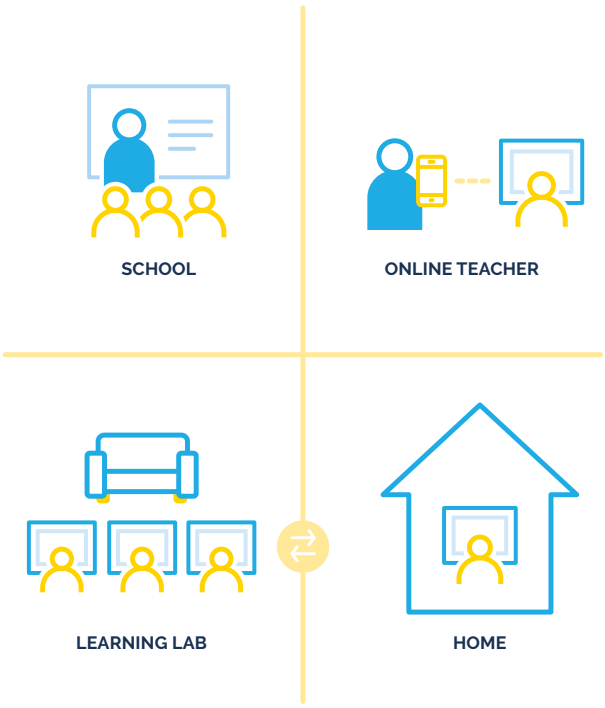


Fig. 3.4 La Carte model
(Source: http://www.blendedlearning.org/model)

In this model, it is very important for students to be disciplined and motivated. The advantage of this model is to enable students to acquire knowledge that they would not get if they were learning only according to a brick-and-mortar school or learning centre curriculum.

3.1.4 ENRICHED VIRTUAL MODEL

This model is characterized by courses that offer face-to-face learning, but also give students the opportunity to study online at home or outside of school. Student must attend schedules face-to-face learning session with a teacher. The model is not the same as Flipped Classroom model, since students do not meet with the teacher face-to-face daily, but often only twice a week. It also different from full online courses, because face-to-face learning is required by the curriculum.

Fig. 3.5 Enriched Virtual model
(Source: http://www.blendedlearning.org/model)

The advantage of this model is to enable students to learn content at their own choice and at their own pace, without the students interrupting each other (Horn & Staker, 2014).

TABLE 3.1. *The questions for selecting blended learning model*

QUESTION	STATION ROTATION	LAB ROTATION	FLIPPED CLASSROOM	INDIVIDUAL ROTATION	FLEX	A LA CARTE	ENRICHED VIRTUAL
1. What problem are you trying to solve?	Core problem involving mainstream students	Core problem involving mainstream students	Core problem involving mainstream students	Nonconsumption problem	Nonconsumption problem	Nonconsumption problem	Nonconsumption problem
2. What type of team do you need to solve the problem?	Functional, lightweight, or heavy weight	Lightweight or heavyweight	Functional or lightweight	Autonomous	Autonomous	Autonomous	Autonomous
3. What do you want students to control?	Their pace and path during the online portion of the course	Their pace and path during the online portion of the course	Their pace and path during the online portion of the course	Their pace and path throughout most all of the course	Their pace and path throughout most all of the course	Their pace and path throughout almost all of the course, with the flexibilityto skip in-person class at times	Their pace and path throughout almost all of the course, with the flexibilityto skip in-person class at times
4. What do you want the primary role of the teacher to be?	Delivering face-to-face instruction	Delivering face-to-face instruction	Providing face-to- face tutoring, guidance, and enrichment to supplement online lessons	Providing face-to- face tutoring, guidance, and enrichment to supplement online lessons	Providing face-to- face tutoring, guidance, and enrichment to supplement online lessons	Serving as the online teacher-of-record	Providing face-to- face tutoring, guidance, and enrichment to supplement online lessons
5. What physical space canyou use?	Existing classrooms	Existing classrooms plus a computer lab	Existing classrooms	A large, open learning space	A large,open learning space	Anysafe, supervised setting	A large,open learning space
6.How many internet-enabled devices are available?	Enough for a fraction of the students	Enough for a fraction of the students	Enough for all students to use in class and have at home or after school	Enough for all students throughout the entire class period	Enough for all students throughout the entire class period	Enough for all students to use in class and have at home or after school	Enough for all students to use in class and have at home or after school

(Source: https://www.blendedlearning.org/choose-the-model)

3.2 TECHNOLOGICAL SUPPORT FOR BLENDED LEARNING*

Obviously, only technology is not enough for the existence and implementation of good blended learning programme, but it plays a major role in making it more efficient. Therefore, hardware and software are important for the implementation of blended learning.

3.2.1 COMPONENTS OF LEARNING TECHNOLOGY INFRASTRUCTURE

According to Bersin (2004) there are seven components of learning technology infrastructure.

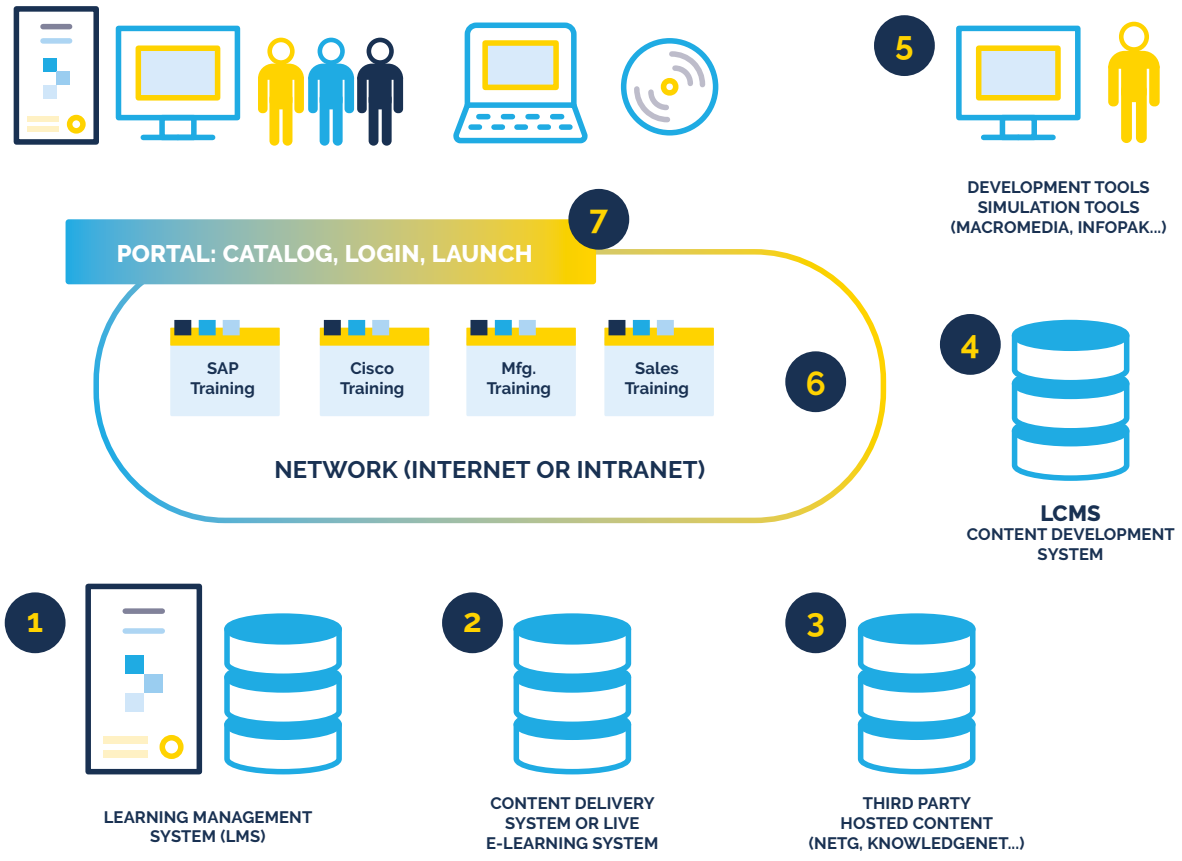


Fig. 3.6 Learning Technology Infrastructure (Bersin, 2004, p. 208)

¬ LEARNING MANAGEMENT SYSTEM

The learning management system (LMS) is the central administrative system to manage blended learning. The task of the LMS is to create a learning environment, enabling enrolment, participating in this environment, tracking the progress of the participant and the like. We could say that LMS has the role of an administrator. It is necessary because that there are several subjects, participants and teachers involved in the learning process, as well as many management processes. This system creates an environment for learning materials, communication between participants and others.

Bersin (str. 209) claims that from a blended learning standpoint, LMS must at least offer these functionalities:

- Scheduled events (classroom as well as live e-learning);
- Self-study programs (web-based courses);
- Reference objects (web pages); and
- Offline materials (books

¬ CONTENT DELIVERY SYSTEM

The second important (and often overlooked) component of this infrastructure is the content delivery system. The fact is that in any e-learning there are many contributors, who generate a lot of content. To be accessible to all contributors and nicely arranged, the content delivery system task is to edit content in chapters and subsections or to create this content in the form of literature. The role of the content delivery system is therefore to store, deliver, and manage that content. The second task of the content delivery system is to record all the actions of the participant (for example, the participant carries out an object and this system must store the content and record all the results to allow the participants to determine the final grade of the chapter or subject in general). The additional task of the content delivery system is security – it must efficiently protect data against unauthorized persons.

¬ HOSTED THIRD-PARTY CONTENT

It often happens that teacher in LMS hosts content created by a third party. Such content is located on the servers of other providers, which means that the content is not owned by teacher or educational institution nor stored on institutional servers. Often it is the case that learning materials are located on the LMS or web portals of someone else and when a participant connects to this LMS, it is located on an unprotected and/or proprietary network. For this reason, it is important that administrators always have an extra space available and must be able to connect between their own and the other interface. It is important that the content that follows on the foreign LMS is properly transferred and stored on home LMS.

¬ LCMS CONTENT DEVELOPMENT SYSTEM AND DEVELOPMENT TOOLS

The structure of the content infrastructure consists of two parts. The first part includes tools used by developers and content creators. The second is content management system that is used on the institution. The system, which is responsible for the creation and proper management of relatively large number of courses and learning content, is usually called LCMS (Learning Content Management System). LMCS is a platform that allows you to create, manage, host and track digital learning content. In it, the teacher can carry out the whole process of education: from the beginning (the creation of learning materials) to the implementation of the educational program and assessment (Bersin, 2004).

¬ THE NETWORK

The sixth component of the learning and technology infrastructure is the network, which is one of the most important pieces of infrastructure. Each electronic content takes a certain amount of bandwidth to run (some more than others). For this reason, it is important to check and test the download at different network location so that ultimately an unobstructed transfer of content is created. Of course, it is also important to consider the possibilities of the connection that the participants have, and to adjust the content. It

is good to check the options for the devices that will be used in the implementation of blended learning. Network administrators can then create appropriate setting for servers, set up a wireless network, wireless access points, and everything else that is important for an efficient network.

¬ LEARNING PORTAL

The last component is a learning portal —the interface from which students carry out the coursework. The task of the learning portal is to facilitate the learning process, sign up and search for the correct content. The learning portal must provide participants with information on when, why, how and how to enrol in the course, information on the appropriate software needed, the standards that are needed, and the like. One of the most important challenges faced by teachers is how to encourage participants to enrol and use the portal as a learning tool.

4

THE BLUES BLENDED LEARNING MODEL*

In the previous chapters, we analysed various models of blended learning, which are recommended by didactic literature and examples of good practices (especially in the field of entrepreneurial education). By considering the characteristics of the syllabus that will be developed in the BLUES project, the implementation of the "Enriched Virtual model" (Horn & Stake, 2015; Bergmann & Sams, 2012; O'Flaherty & Phillips, 2015; Thai, De Wever, & Valcke, 2017) is proposed by the Blues consortium as the most appropriate model. This approach is becoming increasingly popular for the designing a blended learning environment.

As already presented in the syllabus proposal (BLUES, 2018), the activities in the program are two-fold:

1. The first part of the education will be implemented as a Massive Open Online Course from here on known as MOOC form. This means that students will access all the relevant materials via the online platform. The materials will be in the form of video lectures and other multimedia materials.

2. The second part of the training will be held traditionally—face-to-face—and will be available to students who will successfully complete all online (MOOC) activities.

The concept of "Enriched Virtual model" is very suitable for the needs of the training developed in BLUES project, because it contains elements of the traditional, face-to-face learning that students are already accustomed to and the best feature of technology-based learning, which is that content is accessible online regardless of time or place.

As we mentioned in previous chapters, the "frontal" teaching methods (e.g. lectures) are moved to online environment, and students can view them at home, work etc.; on the other hand, practical work, exercises, discussions, reflections and similar "experiential" activities are carried out in the classroom, coordinated by the teacher. For this reason, authors often emphasize that in blended learning models we are dealing with the reverse Bloom's taxonomy (Bergmann & Sams, 2012; Elazab & Alazab, 2015; Tolks et al., 2016).

In a more specific definition of the implementation of learning (which will follow from the proposed activities in the syllabus), we will consider a short guide for implementing blended learning proposed by Horn and Stake (2015).

Dunn (2014) proposes six steps for introducing blended learning:

1. **Plan:** Figure out which lesson you are going to flip. Outline key learning outcomes and put together a lesson plan.

2. **Record:** Instead of teaching your lesson as usual, record a video. You can do this however you would like, just ensure that the lesson contains all the elements you would have if you were doing it in the classroom in person. Make it interesting and engaging. Ask yourself: would I want to watch this?

3. **Share:** Share the video with your students. Explain that the video's content will be discussed and used in class

4. **Change:** Now that your students have watched the lesson, they'll be primed to delved into the topic in more depth than they would otherwise be. Go for it!

5. **Group:** A terrific way to explore the topic is to engage the class in group discussions. Separate the students into smaller groups so that everyone's voice has a better chance of being heard, and questions are more likely to be asked. Give each group a task and a goal to work towards.

6. **Regroup:** Get the class back together to share each group's work with the whole class. As questions, offer opinions, encourage discussion (Dunn, 2014).

The online learning part of blended learning model will be implemented through an interactive online platform that should facilitate the key aspects of the model which are:

- Possibility of group-work (project-work and problem-based)
- Distribution of multimedia and online resources
- Sharing of resources by students and teachers
- Collaboration and support by external experts
- Authoring facilities for both teachers and pupils
- Social networking

The online platform should therefore be able to provide:

- A repository where educational materials (video, reading) can be accessed by students.
- Collaborative working spaces for students and teachers.
- A public space where all students can share their content.
- Forums to enable collaboration between students and teacher.
- A possibility to upload various content (text, images, videos etc.) by students and teachers.
- A user profile page that would serve as a presentation of students and would also record different online activities and learning achievements.

4.1 COURSE CURRICULA*

Course content is structured into 11 modules (6 online, 5 face-to-face modules) that are linked to the environment in the company and the new environments that employees enter in cases of loss or change in employment. The thematic assemblies allow the modular execution of the program. For each thematic strand, common content is defined and represents a framework for achieving program standards. Teachers, depending on the characteristics of the group and the available learning materials, choose between the contents to cover all the thematic strings. It is important, however, that teachers choose the content that is relevant to a specific group of LLL participants. The basic purpose of training in this program is to help participants develop their basic skills with the goal of becoming more independent, more active, more active in various social interactions, as well as in relation to the tasks they perform at workplaces. This will only be possible through learning which is most closely related to the work organization, career planning, and personal development.

4.1.1 COURSE SYLLABUS

MODULE 0. INTRODUCTION

Learning objectives/content:

- What, Why & How. Your road to Entrepreneurship". Brief description of the methodology, content and activities that make up the MOOC.
- Course Roadmap
- Experts Group
- Initial Questionnaire

MODULE 1. ENTREPRENEURSHIP INNOVATION FOR TURBULENT TIMES

Learning objectives/content:

1.1 Why is it important to learn entrepreneurship?

1.2 Introduction to Design Thinking (part 1)

1.3 Introduction to Design Thinking (part 2)

1.4 Technology trends for entrepreneurship

LEARNING OUTCOMES

Upon completion of MODULE 1, students will be able to:

- Establish and develop entrepreneurial attitudes, behaviours, and skills
- Identify and evaluate entrepreneurship opportunities
- Identify different forms of organizational change

MODULE 2. ENTREPRENEURSHIP THEORY OVERVIEW AND CONTEXT

Learning objectives/content:

2.1 Main theories of entrepreneurship

2.2 Conceptual models of each theory

2.3 Case studies

LEARNING OUTCOMES

Upon completion of MODULE 2, students will be able to:

- Understand theoretical foundations for entrepreneurship
- Understand and experience the entrepreneurial process
- Explain benefits and challenges of entrepreneurship
- Describe forms of entrepreneurship operations

MODULE 3. BUSINESS ANALYSIS AND STRATEGIC MANAGEMENT

Learning objectives/content:

3.1 Market assessment and customer development. Main techniques

3.2 Lean Start-up. Business Model Canvas

3.3 Case studies

LEARNING OUTCOMES

Upon completion of MODULE 3, students will be able to:

- Understand and experience goal and plan setting
- Prepare a SWOT analysis
- Explain management by objectives
- Understand the importance of contingency planning and crisis planning

MODULE 4. ORGANIZATIONAL DESIGN

Learning objectives/content:

4.1 Main theories of entrepreneurship

4.2 Delegation. How to delegate tasks to co-workers

4.3 Digital transformation

2.4 Contemporary Forms of Organising

LEARNING OUTCOMES

Upon completion of MODULE 4, students will be able to:

- Discuss the fundamental characteristics of organizing
- Describe span of management, work specialization, (de)centralization
- Understand the recommendations for successful delegation
- Understand outsourcing
- Explain the benefits and challenges of contemporary forms of organizing – co-working

MODULE 5. COMPETING IN THE MARKET

Learning objectives/content:

5.1 Defining the product and the brand (parts 1&2).

5.2 Defining the context: competitors, customers and other stakeholders (parts 1&2)

5.3 Defining the strategy for reaching the market: marketing mix

5.4 Opportunities in digital marketing

LEARNING OUTCOMES

Upon completion of MODULE 5, students will be able to:

- Understand the development of product concept
- Understand demand segmentation and market positioning
- Understand pricing, communication, and retailing channels
- Understand the characteristics of digital marketing

MODULE 6. HUMAN RESOURCE MANAGEMENT AND LEADING FUNCTION

Learning objectives/content:

6.1 Leadership identification. Different kinds of leadership

6.2 Sources of power in a negotiation

6.3 Managing people

6.4 Soft skills

LEARNING OUTCOMES

Upon completion of MODULE 6, students will be able to:

- Identify personal characteristics of effective leaders
- Explain five sources of power
- Explain leadership theories
- Describe transformational leadership
- Explain the roles of leaders in learning organizations

MODULE 7. EXPERIENCE ENTREPRENEURSHIP AND THE ENTREPRENEURIAL LOCAL CONTEXT

Learning objectives/content:

7.1 How to build a team

7.2 How to make the practical experience about the entrepreneurial mindset and environment

7.3 How to choose an incubator, program, or mentor

7.4 Developing entrepreneurship environment

LEARNING OUTCOMES

Upon completion of MODULE 7, students will be able to:

- Form a team
- Understand the entrepreneur's profile
- Experience the entrepreneurship's local context

MODULE 8. IDEATION PHASE

Learning objectives/content:

8.1 Different tools for business models

8.2 Understand different concepts of a SWOT analysis

LEARNING OUTCOMES

Upon completion of MODULE 8, students will be able to:

- Identify tools learned in the MOOC
- Use the business model canvas as a valuable tool
- Apply SWOT analysis

MODULE 9. IMPLEMENTATION OF BUSINESS IDEA

Learning objectives/content:

9.1 Learn how to do a financial analysis of your business

9.2 Different tools in how to finance your business

9.3 Developing literacy in legal issues

9.4 Business plan step by step

LEARNING OUTCOMES

Upon completion of MODULE 9, students will be able to:

- Do their business financial analysis
- Understand financing enterprises and impact investing, competitions, and prizes
- Understand the legal issues of entrepreneurship
- Prepare a Business Model Plan for a business idea

MODULE 10. TOOLS AND TECHNIQUES FOR A SUCESSFUL PRESENTATION

Learning objectives/content:

10.1 How to make a presentation?

10.2 How to write an essay?

10.3 How to Pitch?

LEARNING OUTCOMES

Upon completion of MODULE 10, students will be able to:

- Write and present an idea
- Handing-in of the final project teamwork
- Making the final pitch in 3 to 5 minutes
- Receive feedback from investors and entrepreneurs

4.2 INSTRUCTIONAL METHODS*

The BLUES syllabus is covering the fundamentals of entrepreneurship and management field. The blended-learning BLUES course on developing Entrepreneurship is proposed in 11 modules, that can be adjusted to the needs of a teacher, according to the needs of the region, and participants, as well. Based on our expert interviews and identified needs in the regional analysis it was identified that entrepreneurial education must also include development of soft skills, therefore communication, creativity, problem-solving along with the promotion of an entrepreneurial mind-set are included into our modules. Lectures will incorporate audio-visual technology; students will work on a specific project dealing with a real company (business), societal or environmental problem. Students' progress will be monitored using multimedia. Field will be incorporated in the form of market analysis, prototype testing, implementing the solution, practical exercises of the design thinking methodology. The case studies that each of the partner organizations had conducted to get insight into the regional/national context with regards to entrepreneurial education will be presented through video materials, excursions and invited guest lecturers.

Fundamental teaching and studying methods are based on contemporary concepts of experiential learning, that entails:

- Interactive lectures;
- Presentations;
- Reflection;
- Good practice examples;
- Problem-based cases;
- Movie clips and analysis;
- Analysis and preparation of outcomes;
- Online discussion

The modules are designed as a combination of different modules in the form of (1) interactive lectures, covering theoretically, as well as partially practical part (e.g. good practices examples), as well as (2) seminars dedicated to practical part as well as preparing/ presenting the seminar work.

4.3 EVALUATION AND GRADING*

For a more extent description of these evaluation procedures, you can visit BLUES project webpage (http://eblues.eu/download-course-toolkit/) and download the guides for the implementation of the training courses, where you will find a complete description and templates available in the annexes.

4.3.1 BLUES DIGITAL TRAINING EVALUATION SYSTEM

The participants in the MOOC will fulfil an initial questionnaire (available as Annex 2.1 in the BLUES Tool-kit: http://eblues.eu/download-course-toolkit/), considered as a line base, included in Module 0 in MiriadaX platform.

To progress through the modules, the student must successfully complete the obligations in each module. Once all the topics in each of the next MOOC modules have been completed, a compulsory assessment activity must be carried out, which may consist of a test or an activity.

In our digital course "What, Why & How. Your Road to Entrepreneurship", that you can find as an open resource in BLUES webpage and in MiríadaX platform on a MOOC format, a Self-assessment Test is included at the end of each module.

Tests are the most common type of assessment activity. At the beginning of the test, students are informed about the minimum number of correct answers that they must give and the number of attempts they will have.

In order to successfully complete the course, students must study all the modules and pass all the compulsory tasks.

There is a question at the end of each module and sub-module relating to the corresponding video and textual content asking students about their opinion, not their knowledge, of that specific part of the course. If students wish, they can answer this question in the specific forum and share their points of view with their peers and the experts.

4.3.2 BLUES FACE-TO-FACE PHASE EVALUATION SYSTEM

In the Face-to-Face phase, each student will be graded according to the grade of her/his team and an individual score.

60%	EVALUATION OF THE TEAMWORK WILL CONSIST OF THE EVALUATION OF THE TEAM IN EACH MODULE	
	10%	**MODULE 7** – Assessment of Incubation programs (Annex 3)
	30%	**MODULE 8** – report on interviews (annex 4); Business Model Canvas and SWOT Analysis
	30%	**MODULE 9** – Roadmap for legal obligations and IP strategy (annex 5). A report in the type of financing (annex 6) and financial analysis (excel form)
	30%	**MODULE 10** – Final report (annex 7) and pitch

40%	INDIVIDUAL WORK	
	30%	**MODULE 7** – Short paper (including "coffee with an entrepreneur")
	70%	Each team member will evaluate her/his peers in terms of contribution to the project development. This evaluation will count 70% of the individual grade

For being evaluated, the participant must have:

1. A minimum attendance to 80% of sessions. In any case, it is mandatory to provide documentation to justify the absence

2. Carried out the corresponding individual deliveries as well as actively participate in the team's deliveries

3. Collaborated with the team

4. Fully completed the digital training part (MOOC) of BLUES program

The team score will represent 60% of the final grade, while the individual component will account for the remaining 40%.

4.4 QUALITY ASSURANCE*

The quality of the program will be provided through online questionnaires, which the participants of the web program will complete after completing the module and final evaluation (see appendix "Evaluation questionnaires").

BLUES courses' quality is evaluated with a purpose of continuous improvement and, for doing that, the program incorporates a series of questionnaires specifically designed. These questionnaires are grouped in two blocks: the first one aiming to evaluate each of the training sessions, and the second one for the evaluation of global aspects of the programs.

4.5 ONLINE TECHNOLOGY USED IN BLUES PROJECT*

The online part of the course in BLUES project will be provided on the MiríadaX platform (https://miriadax.net).

The MOOC course we propose for the BLUES project consists of 6 modules with content plus an introductory module 0. Each module corresponds to one week with a workload for students of 4 hours per week, except for module 0 which is given in the same week as module 1. The MOOC course will have a total workload of 24 hours for the students.

MOOC's methodology is recommended, taking into consideration that in the future maybe this particular Blues programme is not going to be the platform where the MOOC will be available.

5

DISCUSSION AND **CONCLUSIONS***

It follows from this brief review that there are very many didactic approaches and methods for teaching entrepreneurship, and there is no single best way to teach entrepreneurship. However, we agree with those authors who claim that student learning outputs can be vastly improved, if teaching is delivered with education objectives in mind, and what we want to achieve with entrepreneurship education. All the literature we have examined shows that not only the "content" of entrepreneurial education is relevant, but also the reflection on the "process". Most often the implementation of student-centred teaching approach delivers the best results. Students in these approaches are active participants rather than passive, and the teacher main role is to facilitate learning, rather than to be the sole authority of knowledge. In this context, we must mention great importance of design thinking in and its implementation in entrepreneurship education curricula. In recent years, with the rise of technology, there has been an increasing number of attempts to integrate educational technology into the educational process. Among these different approaches, blended learning appears to be the one that gives the best results. This way of learning and teaching enables the integration of different teaching strategies and enables the integration of the best aspects of traditional (classroom, face-to-face) teaching with learning in the online environment.

In the past, the inclusion of technologies in learning was impossible due to insufficiently developed technological possibilities. The change in technology has had a great impact on learning through the distribution environment. The current ability of technology has evolved to the extent that an individual can interact in real time with others, although they are not physically located in the same place. This is what led to the association between computer-mediated learning elements and a traditional learning experience. Computer elements are increasingly sociable and humane, which makes the individual feel more and more natural when working with technology (Bersin, 2004). A step forward in this area is also seen in the aggregation of Augmented Reality and similar new technologies. Often, the best results in teaching are achieved when an individual participates in what he is learning (Phillips, 2017).

Despite the many benefits of blended learning, some of the challenges of such an approach should also be recognized. In a study Osgerby (2013) explored students' perception of the blended learning environment and concluded that while it seemed that students have a positive attitude to the adoption of an ICT based learning process, they preferred face-to-face lectures and step-by-step instruction. Similarly, research study led by Naaj, Nachouki et al. (2012) proposed that students' satisfaction with blended learning is influenced by a combination of factors which include the instructor, the technology, class management, interaction, and instruction. Thus, more research is still needed to determine the level of success of different blended learning approaches. Boelens et al. (2017) reveal in their meta-analysis four key challenges that can hinder the results of blended learning programme: **(1) incorporating flexibility, (2) stimulating interaction, (3) facilitating students' learning process**, and **(4) fostering an affective learning climate**. These are the characteristics that planners of the program must certainly consider when planning and implementing training programmes of any kind.

6

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ABBREVIATIONS:

ELI	EDUCAUSE Learning Initiative's, 2018
iNACOL	International Association for K-12 Online Learning () the development of blended learning from 2008-2015
JISC	Joint Information Systems Committee, 2009
LMSC	Learning Content Management System
LMS	The learning management system
LLL	Life Long Leaning
MOOC	Massive Open Online Course
PRRP	Personal Research Reflection P
MiríadaX	Massive Open Online Course platform (https://MiríadaX.net)

7

APPENDIX*

7.1 EVALUATION QUESTIONNAIRES*

Initial questionnaire

Please complete this short initial questionnaire, which will help us to understand student profiles with the aim of better responding to students' expectations. This questionnaire is not an assessment activity but must be completed in order to move on to module 1

CHOOSE ONE OF THE FOLLOWING:

AGE

- 10-20
- 20-30
- 30-40
- 40-60
- Over 60

GENDER

- Female
- Male

OTHER

Where are you from?

- Spain
- Italy
- Portugal
- Slovenia
- Finland
- Other (Europe)
- Other (America)
- Other (Asia)
- Other (Africa)
- Other (Oceania)

LEVEL OF EDUCATION YOU HAVE COMPLETED OR ARE COMPLETING NOW

- Primary / Secondary School
- Vocational Education
- Higher Education – Bachelor's Degree
- Higher Education – Master's Degree

HAVE YOU PARTICIPATED IN ENTREPRENEURSHIP TRAINING/EDUCATION BEFORE?

- Yes
- No

TO WHAT EXTENT DO THE FOLLOWING STATEMENTS DESCRIBE YOU ON THE SCALE: LOW – MEDIUM – HIGH

I have new ideas that can also be of benefit (e.g. give value or joy) to other people	LOW MEDIUM HIGH
I have new ideas that can be turned into entrepreneurship	LOW MEDIUM HIGH
I would often like to do things differently from what is customary	LOW MEDIUM HIGH
I try out new things with an open mind (to create value or joy)	LOW MEDIUM HIGH
I have goals in life that I want to reach	LOW MEDIUM HIGH
I have a vision of how I could carry out my ideas through my own actions	LOW MEDIUM HIGH
I believe in myself and my own abilities	LOW MEDIUM HIGH
I recognize my own needs, wishes and desires in the short and long term	LOW MEDIUM HIGH
I can identify my own abilities / strengths even in uncertain situations	LOW MEDIUM HIGH
I strive with determination to complete the task I find interesting	LOW MEDIUM HIGH
I work hard to reach my goals even when I face difficulties	LOW MEDIUM HIGH
Even if I fail, I try to reach my goal again and again	LOW MEDIUM HIGH
I am able to make an independent decision, even when I am not sure	LOW MEDIUM HIGH
I get by in difficult or uncertain situations	LOW MEDIUM HIGH
I work quickly and flexibly in demanding situations	LOW MEDIUM HIGH
I like to work in a team with different people to solve challenges, develop ideas and turn them into value	LOW MEDIUM HIGH
I like to solve problems and take part in challenging activities	LOW MEDIUM HIGH

DESCRIBE BRIEFLY, IN YOUR OWN WORDS, WHAT THE CONCEPT OF ENTREPRENEURSHIP MEANS TO YOU AT THE MOMENT AND WHAT ELSE YOU WOULD LIKE TO LEARN ABOUT ENTREPRENUERSHIP.

Thank you very much for your answers!

ALTHOUGH THIS MOOC IS A COMPLETE COURSE IN ITSELF, THE BLUES PROJECT OFFERS YOU A TWO-STEP METHODOLOGY: THIS MOOC AND FACE-TO-FACE ACTIVITIES IN FOUR EUROPEAN UNIVERSITIES (MORE INFO HERE). WOULD YOU BE INTERESTED IN PARTICIPATING IN THE FACE-TO-FACE ACTIVITIES AFTER COMPLETING THE MOOC?

- Yes
- No

SELF-ASSESSMENT TEST. MODULE 1

Here are 10 questions for you to see if you have understood the contents of this module.
To pass this test, you must answer at least 50% of the questions correctly.
You have three attempts to pass it. Off you go!
To pass this test, you must correctly answer at least 50% of the questions.

1. WHAT IS THE "OFFICIAL" DEFINITION OF AN ENTREPRENEUR?

- a) Somebody who owns a company.
- **b) Somebody who designs, launches and runs their own business.**
- **c) Somebody who manages a company.**

2. WHAT IS THE DEFINITION OF AN ENTREPRENEUR ACCORDING TO DAVID HARRISON?

- a) Somebody who is brave and takes risks.
- **b) Somebody with a broad knowledge of economic matters.**
- **c) Somebody who undertakes something in a new or different way.**

3. WHAT IS "NON-ROUTINE LABOR"?

- a) Work where we are constantly looking for new problems to solve.
- b) Jobs with a flexible work schedule.
- c) Working with a variety of different clients

4. WHAT ARE THE MAIN ENTREPRENEURIAL SKILLS?

- a) Creative thinking, critical thinking and capacity for communication.
- b) Creative thinking, empathy and capacity for work.
- c) Critical thinking, imagination and multitasking.

5. WHAT IS DESIGN THINKING BASED ON?

- a) Client desires.
- b) Our own views.
- c) Client needs

6. WHAT ARE THE FIVE MAIN STAGES IN THE DESIGN THINKING PROCESS?

- a) Empathize, define, build, test and manufacture.
- b) Empathize, define, ideate, prototype and test.
- c) Observe, define, ideate, prototype and manufacture

7. IN THE DEFINE STAGE, WE CREATE A STATEMENT FOR THE CLIENT OR USER WHICH EXPLAINS...?

- a) What they need and why.
- b) What they would like.
- c) How much they would be prepared to pay

8. IN THE IDEATE STAGE IT IS BETTER...

- a) To focus on finding the best solution.
- b) To create as many solutions as possible.
- c) To focus on finding the cheapest solution possible

9. WHAT IS A "PERSONA" IN THE CONTEXT OF DESIGN THINKING?

- a) The person who finds the best solution to the problem.
- b) Someone who does not want your product but needs it.
- c) The typical profile of a user of your product or service

10. WHAT MATERIALS CAN WE USE TO PROTOTYPE?

- a) Materials which are as similar as possible to the final product.
- b) Any material that we can think of: Lego, plasticine, cardboard, etc.
- c) It is better just to draw a picture and explain it

SELF-ASSESSMENT TEST. MODULE 2

1. WHICH THEORY OF ENTREPRENEURSHIP IS OFTEN CRITICIZED?

- a) psychological
- b) Sociological
- c) Economic

2. WHAT IS THE MAIN DIFFERENCE BETWEEN ENTREPRENEURIAL THEORIES?

- a) The way they look at entrepreneurship
- b) The type of entrepreneurship they study
- c) The part of the enterprise they study

3. WHAT ARE THE MAIN DIFFERENCES BETWEEN SOCIAL AND "ORDINARY" ENTREPRENEURSHIP?

- a) Types of products and services
- b) Strategy, governance, social aim
- c) Profit distribution, governance, social aim

4. WHAT KINDS OF PRINCIPLES LIE BEHIND ENTREPRENEURIAL THEORIES?

- a) Psychological, economic and digital
- b) Sociological, anthropological and historical
- c) Psychological, sociological and economic

5. WHICH ARE THE 3 MAIN CHALLENGES OF AN ENTREPRENEUR?

- a) Self-doubt, resources, time management
- b) Money, marketing, employees
- c) A business model, legal forms, time management

6. WHAT ARE THE 3 MAIN CHARACTERISTICS OF AN ENTREPRENEUR?

- a) Passionate, curious, hard-working
- b) Money-driven, intelligent, passionate
- c) Experienced, well-educated, hardworking

7. CAN YOU LEARN ENTREPRENEURSHIP?

- a) No
- b) Yes
- c) Partially

8. WHAT CAN HELP ENTREPRENEURS TO BE SUCCESSFUL THE MOST?

- a) High investment
- b) Mentorship
- c) Marketing

9. TIMEBOXING IS A TOOL TO HELP ENTREPRENEURS TO:

- a) Structure the day
- b) Not forget about meetings
- c) Schedule meetings

10. WHAT IS SOCIAL ENTREPRENEURSHIP?

- a) Solving social and environmental problems in entrepreneurial ways
- b) Another term for charity
- c) Creating enterprises with the aim of new job creation

SELF-ASSESSMENT TEST. MODULE 3

1. WHAT ARE THE SOURCES OF ENTREPRENEURIAL OPPORTUNITIES?

- a) Professional experience; Personal Experience, Frustration and Passion
- b) Professional experience; Personal Experience, New Markets and Passion
- c) Professional experience; Personal Experience, Courage and Passion

2. WHY DO PEOPLE USE PROFESSIONAL EXPERIENCE AS A SOURCE OF ENTREPRENEURSHIP?

- a) They see the business as an extension
- b) They know how the business works
- c) They try to access services and cannot find the solution

3. WHAT IS ONE OF THE MOST COMMON SOURCES OF ENTREPRENEURSHIP?

- a) Frustration
- b) Triumph
- c) Reputation

4. WHAT DOES THE BUSINESS MODEL CANVAS ALLOW?

- a) Focusing on the Value Proposition
- b) Understanding your own strengths and weaknesses
- c) Adapting your personal SWOT to that of the business

5. WHAT DO YOU CALL THE PROMISE YOU MAKE TO YOUR CUSTOMERS?

- a) The Business Model Canvas
- b) The SWOT
- c) The Value Proposition

6. WHAT TOOL TELLS YOU IF YOU ARE QUALIFIED TO DO THAT BUSINESS?

- a) The Business Model Canvas
- b) The SWOT
- c) The Value Proposition

7. HOW DO YOU LEARN?

- a) In all stages of the business
- b) With homogeneous teams
- c) Thinking rationally

8. WHAT CAN STOP A COMPANY FROM GROWING TO ITS FULL POTENTIAL?

- a) People who help you solve business problems
- b) People who like challenging situations
- c) People in homogeneous teams

9. WHAT IS A CONTINGENCY PLAN FOR?

- a) To learn to reflect
- b) To assess results
- c) To know how to respond to a crisis

10. WHAT TIPS CAN YOU USE TO LEARN FROM YOUR EXPERIENCE?

- a) Do not trust your instincts, learn to reflect and surround yourself with a few people you can trust
- b) Trust your instincts, learn to reflect and surround yourself with a few people you can trust
- c) Do not trust your instincts, learn to reflect and do not trust the people around you

SELF-ASSESSMENT TEST. MODULE 4

1. WHAT IS ORGANIZATIONAL DESIGN?

- a) The definition of organizational values, mission and goals
- b) The identification of the most appropriate legal form of an organization
- c) The creation or change of organizational structures that describe how operations are differentiated, integrated or logically linked

2. WHEN LOOKING AT THE LINKS BETWEEN ORGANIZATIONAL STRUCTURES AND PERFORMANCE:

- a) It is possible to recognize best practices and universal solutions that work well in every context
- b) All organizations differ from each other, so it is not possible to take advantage of sharing best practices
- c) It is possible to recognize best practices and solutions that need some configuration efforts to be usefully adapted to the specific context

3. ORGANIZATIONS OPERATING IN FAST-EVOLVING MARKETS, THUS OFFERING PRODUCTS/ SERVICES WITH A SHORT LIFE CYCLE, ARE INCREASINGLY ADOPTING:

- a) Highly hierarchical divisional structures
- b) Highly flexible matrix organizational structures
- c) Frequent changes between functional and divisional structures

4. LEADERS DELEGATE WORK TASKS WHEN:

- a) They are not good leaders, because leaders do not delegate
- b) They aim to create more diffused responsibility and accountability throughout the organization
- c) They need to release the pressure of their legal duties

5. IN DELEGATION, ESTABLISHING AND MAINTAINING CONTROL:

- a) Is essential to efficiently pursue organizational goals
- b) Is essential to reduce the responsibility on delegates
- c) Contradicts the need for delegation

6. WHAT IS DIGITAL TRANSFORMATION?

- a) The development of algorithms and software aimed at supporting the decision-making process in times of organizational change
- b) The integration of digital solutions (such as cyber-physical systems, the Internet of things, cloud computing and cognitive computing) in all areas of business to deliver new value to customers
- c.)The adoption of digital marketing solutions (e.g. e-commerce, social influencers, advertising through gamification, etc.)

7. THE BIGGEST CHALLENGE WHEN PURSUING DIGITAL TRANSFORMATION IS:

- a) Ensuring a coherent cultural change
- b) Accessing innovative technologies
- c) Benefiting from public incentives

8. WHAT ARE THE MAIN ADVANTAGES OF DECENTRALIZED ORGANIZATIONAL STRUCTURES?

- a) The possibility of enforcing hierarchy decision-making, an authoritarian approach, a strict coordination of resources
- b)The possibility of improving uniformity, fast execution and accountability
- c) The possibility of improving participation, empowerment, creativity, adaptation and diversification at the different levels of an organization

9. DIGITAL TECHNOLOGIES DO NOT AUTOMATICALLY ADD VALUE TO TALENT MANAGEMENT BECAUSE:

- a) They are not always consistent with existing HR practices
- b) The traditional local search for talents is often more effective
- c) They introduce higher costs for data collection and processing

10. IN FAST-EVOLVING INDUSTRIES, OPENNESS IS AN ORGANIZATIONAL TRAIT THAT:

- a) Always leads to higher risks, ineffective use of internal resources and limited results
- b) Is capable of leading to resource efficiency, especially when time is the scarcer resource
- c) Always demotivates internal employees to act with accountability

SELF-ASSESSMENT TEST. MODULE 5

1. WHAT IS LEVITT'S MODEL OF CUSTOMER-VALUE HIERARCHY?

- a) A model that aims to hierarchize categories of products according to consumer preferences
- b) A model that considers products as a stratification of the level of attributes and in which each next level up contains the previous ones, like in concentric circles
- c) A model that defines the materials and services required to manufacture a specific product

2. ACCORDING TO THE AMERICAN MARKETING ASSOCIATION, WHAT IS A BRAND?

- a) A name, term, sign, symbol, or design, or a combination of them, intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of competitors
- b) The officially registered trademark
- c) A name that identifies a manufacturer

3. **WHAT IS MARKET SEGMENTATION?**

- a) A process through which similar manufacturing companies are identified in terms of the products made
- b) A process through which marketers identify groups of customers who have similar needs and wants within the same market
- c) A process through which homogeneous groups of companies and potential customers are identified in order to facilitate their meeting in the market

4. **WHAT IS MARKET POSITIONING?**

- a) The place that the product occupies in consumers' minds compared with competing products
- b) The place where the product is distributed
- c) The place where the enterprise is located

5. **THE MINIMUM PRICE CORRESPONDING TO VARIABLE COSTS IS:**

- a) The break-even price
- b) The floor price
- c) The mark-up price

6. **SHORT-TERM INCENTIVES TO ENCOURAGE THE PURCHASE OR SALE OF A PRODUCT IS THE DEFINITION OF:**

- a) Advertising
- b) Personal selling
- c) Sales promotion

7. **WHAT KIND OF DISTRIBUTION IS THAT IN WHICH THE PRODUCT IS STOCKED IN AS MANY OUTLETS AS POSSIBLE?**

- a) Exclusive distribution
- b) Intensive distribution
- c) Selective distribution

8. **WHAT ARE THE MAIN POINTS FOR ACHIEVING THE GOAL?**

- a) Defining the objectives and the target audience
- b) Checking the most influential digital platforms
- c) Forming multitasking work groups

9. **HOW WOULD YOU PROCEED TO REACH THE "CALL TO ACTION"?**

- a) Advertising the product and the company on all digital platforms
- b)Proposing a custom made to attract attention
- c) Evaluating the target audience and studying the approach using touch points

10. IF YOU HAD TO SELL "SERVICES FOR ACCOUNTANTS", HOW WOULD YOU APPROACH PRESENCE ON THE VARIOUS PLATFORMS?

- a) It is a service that requires advertising on all Social Networks
- b) A trial proposed on the website
- c) Studying the flow of information inherent to the type of target audience and structuring communication on the appropriate platforms to reach the goal

SELF-ASSESSMENT TEST. MODULE 6

1. WHICH LEADERSHIP MODEL FOCUSES ON MOTIVATIONAL AND INSPIRATIONAL ASPECTS OF LEADERSHIP?

- a) Instrumental leadership
- b) Transformational leadership
- c) Transactional leadership

2. IN WHAT MODEL DO SUBORDINATES EXPECT THE LEADER TO PROVIDE RESOURCES TO DEAL WITH DAILY PROBLEMS?

- a) Instrumental leadership
- b) Transformational leadership
- c) Transactional leadership

3. WHAT ASPECT SHOULD THE LEADER PAY ATTENTION TO SO THAT PEOPLE REALLY BELIEVE THAT WHAT THEY DO HAS VALUE?

- a) Salary aspect
- b) Adaptation aspect
- c) Inspirational aspect

4. WHAT DOES A LEADER HAVE TO DO IN HIS DAILY ACTIVITY REGARDING THE SOURCES OF POWER?

- a) Try to understand what happens around you to know which sources of power are less effective in a given situation
- b) Try to understand what happens around you to use the same sources of power that are most effective in a given situation
- c) Try not to understand what is happening around you to know which sources of power are less effective in a given situation

5. WHAT IS THE MOST OBVIOUS BUT LEAST EFFECTIVE SOURCE OF POWER?

- a) The one that comes from the informal position that is occupied in an organization
- b) The one that comes from the direct position that is occupied in an organization
- c) The one that comes from the formal position that is occupied in an organization

6. WHAT SOURCE OF POWER REFERS TO THE PEOPLE YOU KNOW WHO CAN CONTRIBUTE TO THE SUCCESS OF YOUR PROJECT?

- a) Power from the context
- b) Relationships and the network
- c) Access to information

7. WHY IN STARTUPS IS IT DIFFICULT TO ESTABLISH A SPECIFIC POSITION?

- a) It is not difficult; on the contrary, it is necessary for each worker to take responsibility for a specific task
- b) It is impractical because, especially at the beginning, startups have few staff members and workers must perform different tasks
- c) It is difficult because they have to compete with large organized companies

8. WHAT GENERATES STRESS IN STARTUPS?

- a) The dynamic system and very fast change mean that you have little time to recover from the last change made in the organization
- b) The undynamic system and very fast change mean that you have little time to recover from the last change made in the organization
- c) The dynamic system and very fast change mean that you have a lot of time to recover from the last change made in the organization

9. WHAT GENERATES STRESS IN STARTUPS?

- a) They are the skills that prevent an entrepreneur from negotiating well, being more creative and building stronger connections
- b) They are the skills that allow an entrepreneur to be able to negotiate well, be more creative and build weak connections
- c)They are the skills that allow an entrepreneur to be able to negotiate well, be more creative and build stronger connections

10. WHAT IS THE MOST IMPORTANT SOFT SKILL?

- a) Fear
- b) Emotional Intelligence
- c) Anger

Final questionnaire

Please complete this short final questionnaire, which will help us to understand student profiles and better respond to students' expectations. This questionnaire is not an assessment activity, but must be completed in order to finish the course

TO WHAT EXTENT DO THE FOLLOWING STATEMENTS DESCRIBE YOU ON THE SCALE: LOW – MEDIUM – HIGH

I found this course very useful and practical	○ LOW ○ MEDIUM ○ HIGH
I found the content of the course modules difficult	○ LOW ○ MEDIUM ○ HIGH
I found the information in this course inspirational and motivating	○ LOW ○ MEDIUM ○ HIGH
In my opinion, the modules covered most of the topics required for launching a startup or becoming an entrepreneur	○ LOW ○ MEDIUM ○ HIGH
I agree that blended learning is a good method for learning	○ LOW ○ MEDIUM ○ HIGH
What is the likelihood that you will look for more information about becoming an entrepreneur	○ LOW ○ MEDIUM ○ HIGH
How likely are you to recommend this course to someone else?	○ LOW ○ MEDIUM ○ HIGH

DESCRIBE BRIEFLY, IN YOUR OWN WORDS, WHAT THE CONCEPT OF ENTREPRENEURSHIP MEANS TO YOU AT THE MOMENT AND WHAT ELSE YOU WOULD LIKE TO LEARN ABOUT ENTREPRENUERSHIP.

Thank you very much for your answers!

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