



INTERNSHIP MODEL FOR THE ACQUISITION OF ENTREPRENEURIAL MIND-SET AND COMPETENCES

WORK PACKAGE 3: DEVELOPMENT OF THE INTERNSHIP MODEL
TASK O3.1. MODEL FOR INTERNSHIP

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Internship model for the acquisition of entrepreneurial mind-set and competences

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1. Introduction

The competitiveness of European economy requires citizens and particularly young people to be innovative, creative, flexible and courageous to face challenges in a dynamic and volatile economy. Globalisation has increased the pressure on economies to compete and innovate, and a vibrant base of creative and innovative entrepreneurs is critical to being able to meet the challenges of globalisation as well as to taking advantage of the opportunities that arise from it. Entrepreneurs create employment and prosperity, and thus they play an important role in the economic and social well-being of European citizens (European Commission, 2015). The development of the entrepreneurial capacity of European citizens and organisations is one of the key policy objectives of the EU and the Member States.

Entrepreneurial mind-set and skills are not a given personal characteristic: they can be developed through learning and experience, and they can be achieved within the education system. Thus, the European Union has set as a strategic objective to enhance creativity and innovation, including entrepreneurship at all levels of education and training (Council of the European Union, 2009).

EnterMode project aims at stimulating entrepreneurship and entrepreneurial skills of higher education teaching staff and company staff and develop an entrepreneurial mind-set and related skills in higher education students. By working together, fourteen institutions from eight EU countries strive to achieve this goal¹.

“The Internship model for the acquisition of entrepreneurial skills by higher education students” is one of the EnterMode project outputs and is based on the Background Study "Entrepreneurial education in HE in partner's countries, entrepreneurial skills required by HE students, the framework for internships". The Study is the result of research that has targeted three main groups (students, HEIs and companies) and has been implemented in five EU countries (Germany, Greece, Hungary, Italy and Slovakia). The aim of the research was to understand the role of internship in entrepreneurship education and to propose recommendations on how to optimise internships so that students gain not only their study expertise but also entrepreneurial skills².

“The Internship model for the acquisition of entrepreneurial skills by higher education students” is an integrated model of entrepreneurship skills acquisition that includes different levels of learning, comprising the following:

- challenge-based learning through internships in companies;
- hands-on learning of entrepreneurship skills through serious gaming;
- micro-learning with the aid of social media;
- distributed social learning within Communities of Practice;
- organisational learning through the use of learning analytics;
- experimental learning across HEIs and companies.

¹ More information is available at <http://entermode.eu/>

² the Study is available at <http://entermode.eu/outputs/>.





'The Internship model for the acquisition of entrepreneurial skills by higher education students' is focused on the main competence areas of entrepreneurship, using EntreComp, the Entrepreneurship Competence Framework (2016) that was selected during the background study as a key reference document³.

The Model consists of eleven mutually interconnected chapters. First of all, after the Introduction, a general overview of the model (Chapter 2) offers readers comprehensive insights into the Model as a new scheme for the organisation of internships. The more detailed description of the internship model is presented in Chapter 3, which enables readers to visualise the main Model components and their interrelationships. Chapter 4 describes the roles of each actor. Chapters 5 and 6 are devoted to challenge- based learning and incubation. Chapter 7 illustrates the Entrepreneurship Competence Framework and is aimed at a deeper understanding of the main competence areas of entrepreneurship. Chapter 8 deals with learning outcomes. Chapters 9, 10 and 11 are focused on gamification, learning analytics and community of practice. The practical steps for implementation and sustainability of the Model are part of Chapter 12. A glossary contains explanations of concepts relevant to an Internship model content.

The model offers the theoretical background for the development of entrepreneurial skills to students during their internships. It describes the theory behind each element that can be applied. The model should be read in conjunction with the trainers' guide⁴, which offers practical guidelines and tools, on how to apply the model in your organisations' context. In the trainers' guide, you can also find case studies that were collected during the piloting of the internship model.

We believe that the Model is general enough to be applied in different contexts and countries in Europe. The diversified profile of the partners' countries enabled to cover diverse needs and sectors and offered at the same time a 'one size' model with specific suggestions to shape it to different contexts, to ensure its wider transferability.

Nevertheless, **to develop one's own internship model**, which can feed and promote the acquisition of entrepreneurial skills, it is necessary to:

- adopt a common reference framework for entrepreneurial skills and mind-set, integrate the internship programme to the curriculum and adopt entrepreneurial assessment methods;
- develop the internship programme flexibly to respond specifically to students' interests and needs;
- involve companies' mentors and create a friendly incubation environment for students in a company;
- take into account risks: dynamic enterprises' environments, insufficient involvement of partners, hostile administrative system, the relegation of the students to ordinary tasks, inapplicability to different sectors, lack of interest and motivation, etc;
- respond to challenges: the creation of a friendly incubation learning ecosystem in the company, adoption of innovative teaching methods, offering a supportive 'bridging' structure between universities and society.

³ Available at <http://publications.jrc.ec.europa.eu/repository/bitstream/JRC101581/lfna27939enn.pdf>

⁴ the trainers' guide is available at <http://entermode.eu/outputs/>.





The team of authors believes that **'The Internship model for the acquisition of entrepreneurial skills by higher education students'** provides useful knowledge and guidance for further development of entrepreneurial skills and mind-set of HEIs students and HEIs staff but also for companies and other organisations and individuals interested in these topics. Furthermore, the model presented below can be used as a point of reference, which can act complementarily in all forms of internships, for the development of entrepreneurial skills to students.





2. Internship Model – Rationale and general overview

Entrepreneurial mind-sets and skills are very important to graduates of European higher education institutions, since they are key agents to develop the European knowledge economy, foster innovation and boost economic development. They therefore need to be equipped not only with specific knowledge and skills of their area of study, but transversal creativity, innovation and entrepreneurial skills.

Internship in higher education is a work-placement in a company, aiming mainly to acquire professional experience in the specific field of study and soft employment skills. It is therefore a chance for students to incorporate their on-the job work experience and knowledge into their university education by being in a supervised and planned real-world professional work environment (Renganathan, Abdul Karim and Chong, 2012). But internships are not only that. According to Calloway & Beckstead (1995), the internship experience exposes students to practical skills, improves their social relationships, motivates future learning and enhances their social personality, while it proves useful in finding full-time employment after graduation (Fuller & Schoenberger, 1991). Furthermore, according to Matthews & Zimmerman (1999), internships help students improve problem solving, critical thinking, and theoretical skills while at the same time they help them putting abstract concepts into context.

Researchers state that in order for internships to be successful and have valuable effect on students, careful design and programming is required. According to Narayanan and Olk (2010), two of the most important factors for the success of internships, which need to be considered at the planning phase, are mentoring and the sources of students' satisfaction. Having a mentor was found to be critical even if the relationship between mentor and student was limited to brief periods of time. For satisfaction, researchers reported that what students find rewarding about an internship is skill and task variety, autonomy, the work itself, and so forth (Rothman, 2003).

Careful design is not the only success factor of an internship. Internships involve three actors: the sending organisation, the receiving organisation and the student. These actors have distinct objectives and hence pursue different outcomes. That is why in Higher Education internships, there is often a lack of coordination between the sending HEI and the hosting company on the specific objectives, activities and expected results of the internship. Thus, aligning those goals can lead to positive outcomes for each party.

The proposed EnterMode internship model aim is therefore to combine all above mentioned elements in order to promote the acquisition of entrepreneurial skills and competences by students in higher education during their internships, using challenge-based approach with gamification elements.

Specifically, the EnterMode internship model's objective is to help students in higher education:





- to develop personal attributes and skills that form the basis of an entrepreneurial mind-set and behaviour, such as creativity, sense of initiative, risk-taking, autonomy, self-confidence, leadership, and team spirit;
- to raise awareness about self-employment and entrepreneurship as possible career options;
- to work on concrete enterprise projects and activities;
- to acquire specific business skills and knowledge of how to start a company and run it successfully.

The EnterMode internship model is based on the following pillars:

1. Challenge based learning, based on constructivist pedagogy and rich learning tools that allow for anticipation and authentic experience of entrepreneurial roles and tasks as well as for developing problem solving strategies towards real world challenges of entrepreneurship.
2. Learning outcomes for the acquisition of entrepreneurial mind-set and skills, based on the EntreComp framework.
3. Gamification technics by using a serious game, especially developed for the EnterMode model, which will motivate students and will act complementary for the acquirement of entrepreneurial skills and competencies.
4. Incubation of an entrepreneurial spirit and culture, and the development of knowledge, competences and skills needed to put entrepreneurship into practice.
5. Stimulation of HEI - company partnerships, with a view to ensure the sustainability of the cooperation.
6. Building capacities through the development of a community of practice that supports the development, sharing of and critical reflection on entrepreneurship practice as well as socialising newcomers into the world of business.
7. Learning analytics, that allows us to track learning progress of students' entrepreneurial competences, on personal and collective level, and thus to continuously adapt the EnterMode model to changing personal and organisational needs.

The EnterMode model is therefore a combination of different elements, practices and methods which will help individuals involved in organisation of internships to carefully design and plan internships of HEI students in companies, which will produce benefits for all involved actors, namely for the education institution, the receiving organisation and more importantly the student himself/herself.

The adoption of the EnterMode internship model as a new scheme for the organisation of internships does not require additional financial and human resources. All universities have structures that provide services linking students with companies, arranging internships and transnational mobilities. The EnterMode internship model can be integrated in the services that the career offices, internship offices, international relation offices are already offering to students at no additional cost.





Benefits of applying the internship model

The internship model and the enhancement of entrepreneurial skills of students during their internship, offers many benefits not only to students, but also to companies, which host the internships.

The benefits for companies and organisations are:

- Easier recruitment of talents: through applying the internship model, companies come in contact with students who are dedicated in enhancing their skills and increase their competences, thus making the process of finding new competent employees much easier.
- Cost savings: companies can reduce costs from recruitment processes and also from training new employees.
- Faster integration: Through applying challenge based learning during the internship, which is based into a real problem of the company, students are integrated faster into the company's culture.
- Increased productivity: Through faster integration of the students into the company and through the development of their skills, according to the challenge set by the company, the later can experience a boost in productivity and delivery of work by their interns.
- Fresh ideas/enhanced perspectives: students bring with them fresh ideas which companies can benefit from. Furthermore, through the model, the students are left free to choose their own path for solving the challenge proposed, which most of the times is different from the one that the company would follow.
- Mentorship opportunities: Company trainers also have the chance to act as mentors to students and develop their own mentoring and pedagogical skills.
- Increased visibility of organisations: companies which will apply the EnterMode model will share their stories, which will be presented as case studies. Furthermore, since the EnterMode model is an innovative tool, in the future companies involved in applying the model will experience an increase of their visibility to students, other companies and HEI institutions.
- Networking: Companies applying the EnterMode model will expand their networks with other companies and HEIs through the use of the Community of Practice.
- Close skill gaps: By applying the model to enhance entrepreneurial skills to students, companies will be able to contribute to the alleviation of the skills gap between the world of work and the world of education.

The benefits for students are:

- Faster integration: by being given a real challenge of the company, students will be able to integrate faster into the company and learn by doing how it operates.
- Support to students: through incubation, students will have access to support from their mentors and access to resources of the company.
- Increase Self-Esteem and confidence: by being left to work alone and choose their own solutions to solve the challenge, students will experience an increase in their self-esteem and confidence.

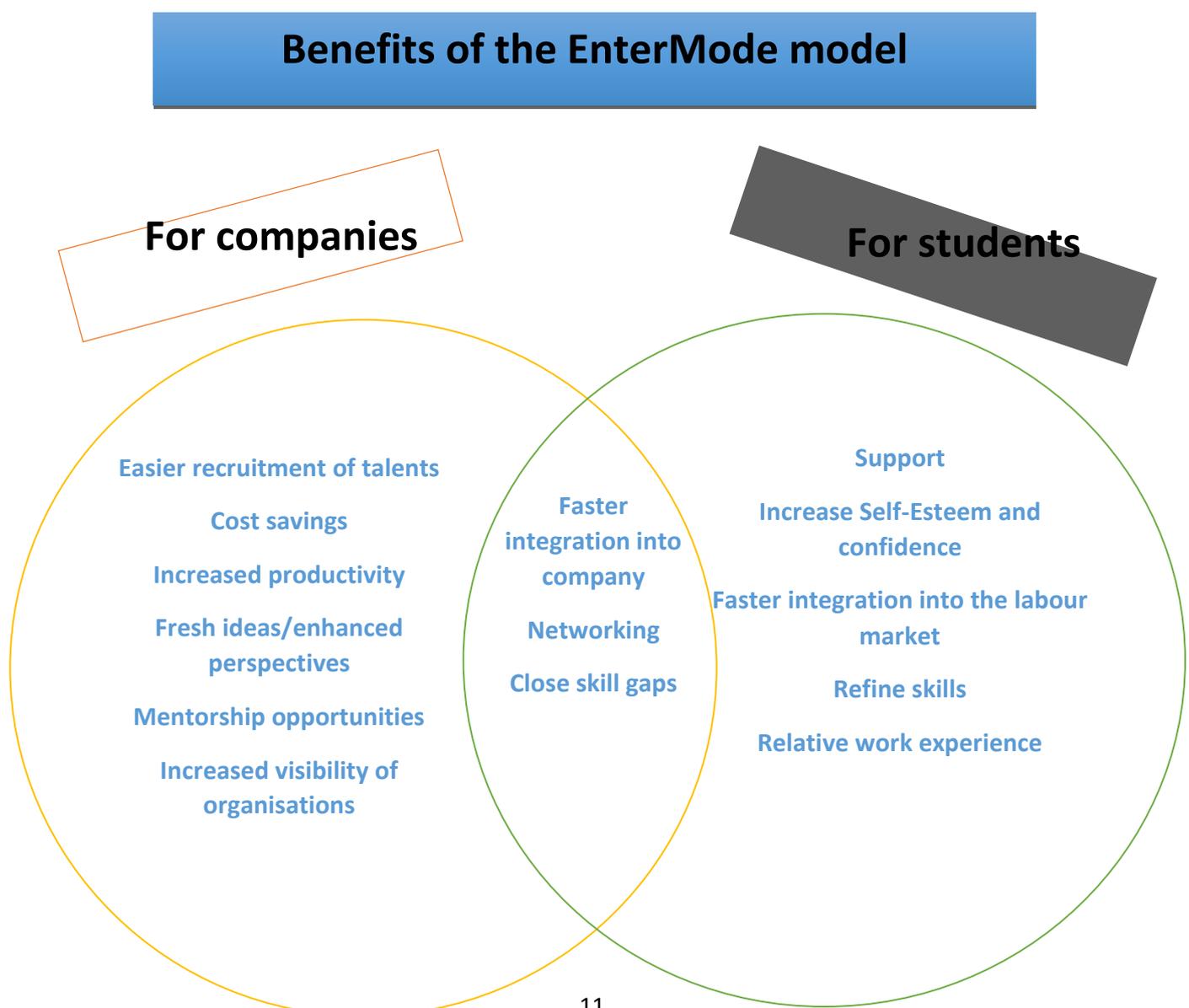




- Faster integration into the labour market: Student will gain the necessary skills which will ease their transition into the labour market.
- Refine skills: students will develop their entrepreneurial competences and skills, which are considered by the EU commission as one of the key competences for lifelong learning.
- Relative work experience: by being involved in the EnteMode project, students will gain relative work experience, since they will be introduced into a real problem of the company they do their internship in.

The graphic below shows those benefits in a visual way.

Figure 1. Benefits of using the EntreMode internship model





3. The EnterMode Internship Model for acquiring entrepreneurial competences

As stated above, the aim of the EnterMode internship model is to facilitate the acquisition of entrepreneurial skills and competences by students in higher education, using challenge-based approach with gamification elements.

Internships are usually offered by Higher Education Institutions as an integrated part of the curriculum. We could define internships as a structured work experience related to the student's main study area, where the student has the chance to apply the knowledge and skills learned in the classroom into real business environment. Internships give students a real-life experience of the workplace, which helps them develop not only technical and occupational competences, but also it fosters the development of employability skills.

The objectives of an internship are:

- To familiarise students of Higher Education Institutions with the working environment and the requirements of the professional world,
- To acquire work experience relevant to their field of study,
- To develop the professional and employability skills of students,
- To integrate the graduates into the productive system of the country,
- To connect the academic world and knowledge with the workplace,
- To create a two-way dissemination and collaboration channel between Universities and companies.

The additional objective that is introduced by the EnterMode entrepreneurial internship model for students is to develop the entrepreneurial competences of students and help them acquire the necessary skills that will help them turn their business ideas into concrete actions. Students, as entrepreneurs, will have the opportunity to take control over the details of their internship, by designing their steps and by taking over their educational path.

The EnterMode internship model uses the challenge-based learning methodology, which can be applied in three different phases: engagement phase, investigation phase and into action phase. During the engagement phase, there is the matching between intern and company and the definition of the challenge by all parties involved. During the investigation phase, the student with the support of the company mentor starts working on the defined challenge, finds the required resources and defines the action plan. In the last In to action phase, the student implements the action plan and finalises his/her project, while at the end of this phase, there is the final assessment. In each phase, students acquire different skills and competences, according to EntreComp framework. The other core elements of the model, serious game and Community of Practice are applied to all three phases of the internship. The overall scheme of the EnterMode model is shown in figure 2.





There are no restrictions regarding the resources that a company must possess in order to apply the internship model. The model is designed in such a way that it can be applied in every context and in different companies, no matter if they are small, medium or large. It is expected that different companies will have access to different resources and in some companies the roles of different persons, which are explained in a later chapter, may overlap, but the model proposes a general framework with specific suggestions, which can be shaped, to ensure its transferability.

Regarding the time to plan the activities for the model, it depends on the availability of the company and the duration of the internship. The EnterMode model will be piloted in 40 cases for a minimum duration of 30 days. In any case, the model can also be adjusted into different contexts, where the duration of the implementation may change.

Potential Risks in implementation

During the implementation of the internship model, some risks may occur, which may hinder its progression. Below we identify some of those risks and propose some ways to mitigate them:

Risk: No interest from companies or students to participate in the model

Mitigation: In this case it is better to draw more attention to and disseminate the benefits that both companies and students will acquire from the implementation of the model.

Risk: The challenge given is irrelevant to the company needs or does not aim at developing the students' entrepreneurial skills

Mitigation: As proposed by the model, it is best for the company to propose the challenge and then define the activities together with the students. As for the learning outcomes, the EntreComp framework proposes a complete set, from which the company mentor can choose. At a later stage, the final internship plan is reviewed by the HEI academic, which ensures that it is relevant with the objectives of the model.

Risk: There are deviations from the plan agreed at the beginning

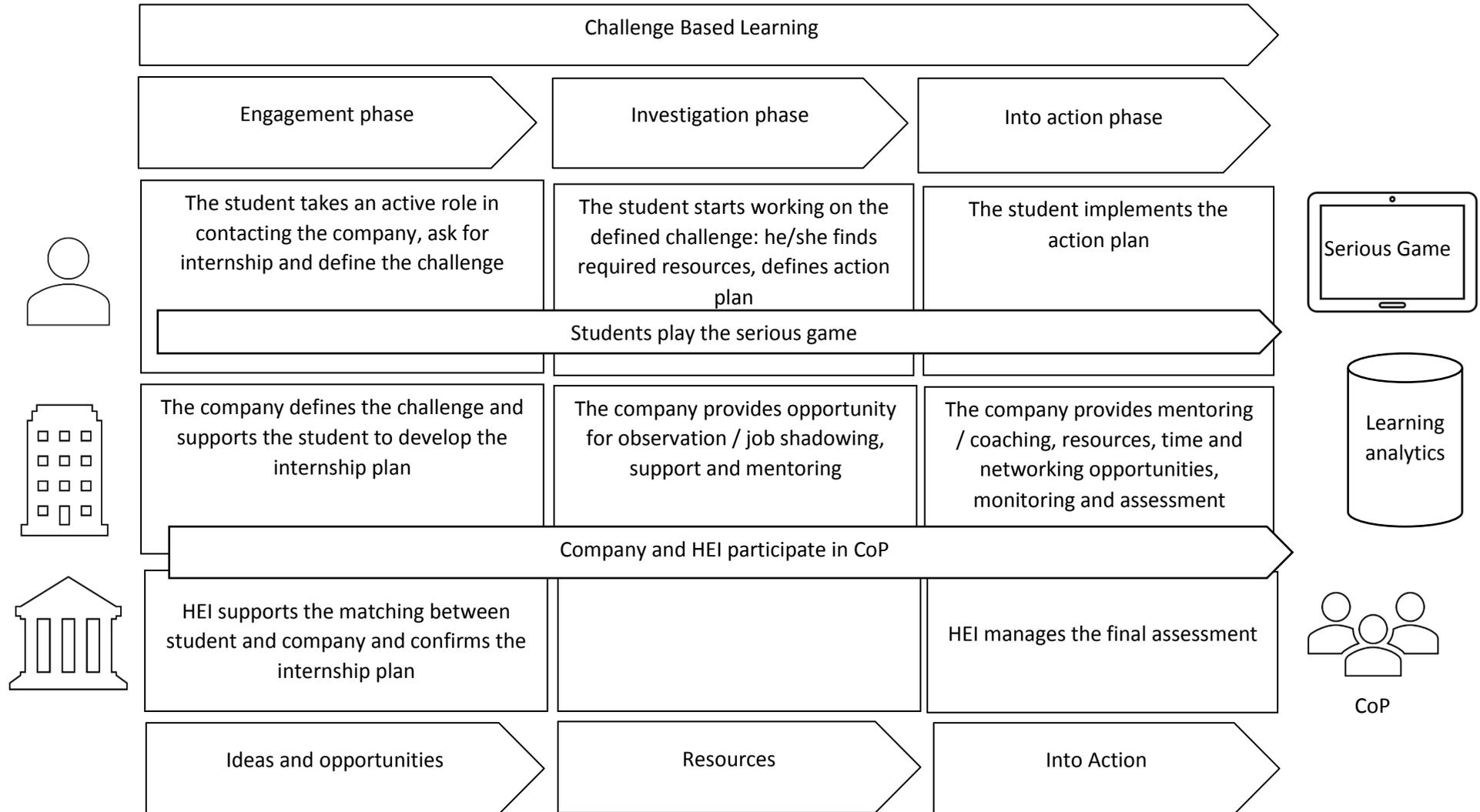
Mitigation: Regular meetings are going to be implemented between the students and the company mentor, who is responsible also for the monitoring of the internship, which will ensure the successful completion of the challenge. The mentor can also apply corrective measures if deemed necessary.

Risk: The company mentor is not engaged in the process

Mitigation: The Community of Practice will engage the participants in developing the EnterMode model and will provide mentors and other stakeholders with the necessary information or answer their inquiries.



Figure 2: The EntreMode model scheme





4. Roles

The implementation of an internship involves different actors, namely the sending and receiving organisations and the student. These actors may involve more than one person, from the stage of pre-planning to the implementation and the finalisation of the internship. All those involved persons have different roles, so the success of the internship depends on the organisation and coordination of all persons involved.

In order that the EnterMode internship model is fully applied and adjustable to different contexts, the involved persons must be aware of their roles at the first place. Each party therefore has a distinctive role, with distinctive responsibilities and rights. In some cases, like for example in small and medium organisations, the roles mentioned below may overlap and be taken up by the same person. More specifically, in the EnterMode model the involved parties and their roles are:

Student:

Students are the main beneficiaries of the internship and the direct target group of the EnterMode internship model. In order to take part in an EnterMode internship, the student has to firstly apply to the responsible office of his/her HEI. After he/she is selected to participate, the student will jointly with the hosting company define/agree the Internship Plan and form the challenge of the internship together. Following the finalisation of the internship plan, he/she will sign the learning agreement with the hosting company and the HEI. The next step is the Implementation of the internship, where he/she will work on the challenge given, while implementing the work plan and at the same time he/she will participate in the serious game. During the internship, the student must also keep a log book of completed tasks, which will be monitored by the company mentor. At the end of the internship, the student will take part in the final assessment of the internship and he/she will produce the final report. Furthermore, he/she will conduct a self-assessment of entrepreneurial skills he/she has acquired.

HEI Administration officer:

The HEI Administration officer is responsible for attracting participants from both sides (i.e. students and companies), for preparing all necessary paperwork (MoUs, agreements, etc.), for supporting the matching of students with companies and for administratively managing the internship. The HEI Administration officer provides an overall advice or training to the mentors (on their role, duties, responsibilities, on how to manage the intern/mentor relationship, etc.)

HEI Academic responsible:

The HEI Academic responsible defines the selection criteria for participants (i.e. students and companies), provides feedback (and approval) to the learning plan and participates in the assessment of each specific internship implemented and the internship programme in total.

Mentor (Company):





The mentor is responsible for supporting the student in all steps of his/her internships, starting from the initial definition of the challenge (to be approved by the HEI Academic Responsible) and continuing on all subsequent monitoring and advising steps. If needed, the mentor applies corrective measures during the internship and contacts the HEI Administration office or even the HEI Academic responsible for solving internship problems on time. He/she provides an overall assessment of the implemented internship.

Recent research strongly suggests that mentors need to be trained to understand the framework in which they have to act and to develop relation building skills in order to create an efficient mentoring relationship with their mentees (i.e. the students). So, the mentor's training is a critical step before the implementation of the internship and the actual collaboration between the mentor and the student. A mentor's trainer (who could be either the HEI Academic Responsible or an external trainer) will clearly define the internship framework to the mentors and will define the framework of their relationship with the students by clarifying the roles and responsibilities of each part. In addition, the mentor's trainer will help the mentor to develop the necessary skills for a better knowledge and experience transfer focusing on skills such as communication, questioning and listening skills, or how to build a trustful relationship.

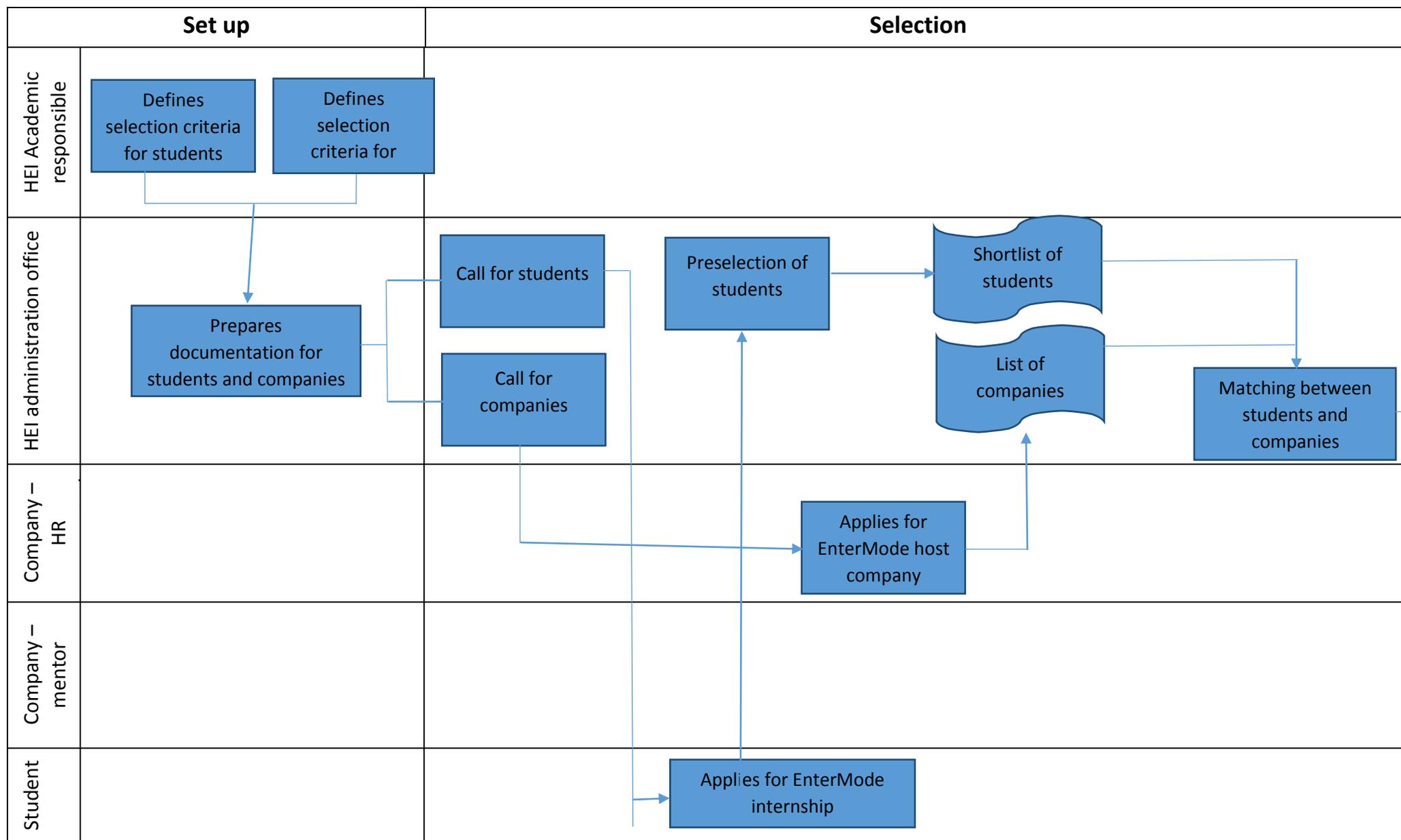
HR Responsible (Company):

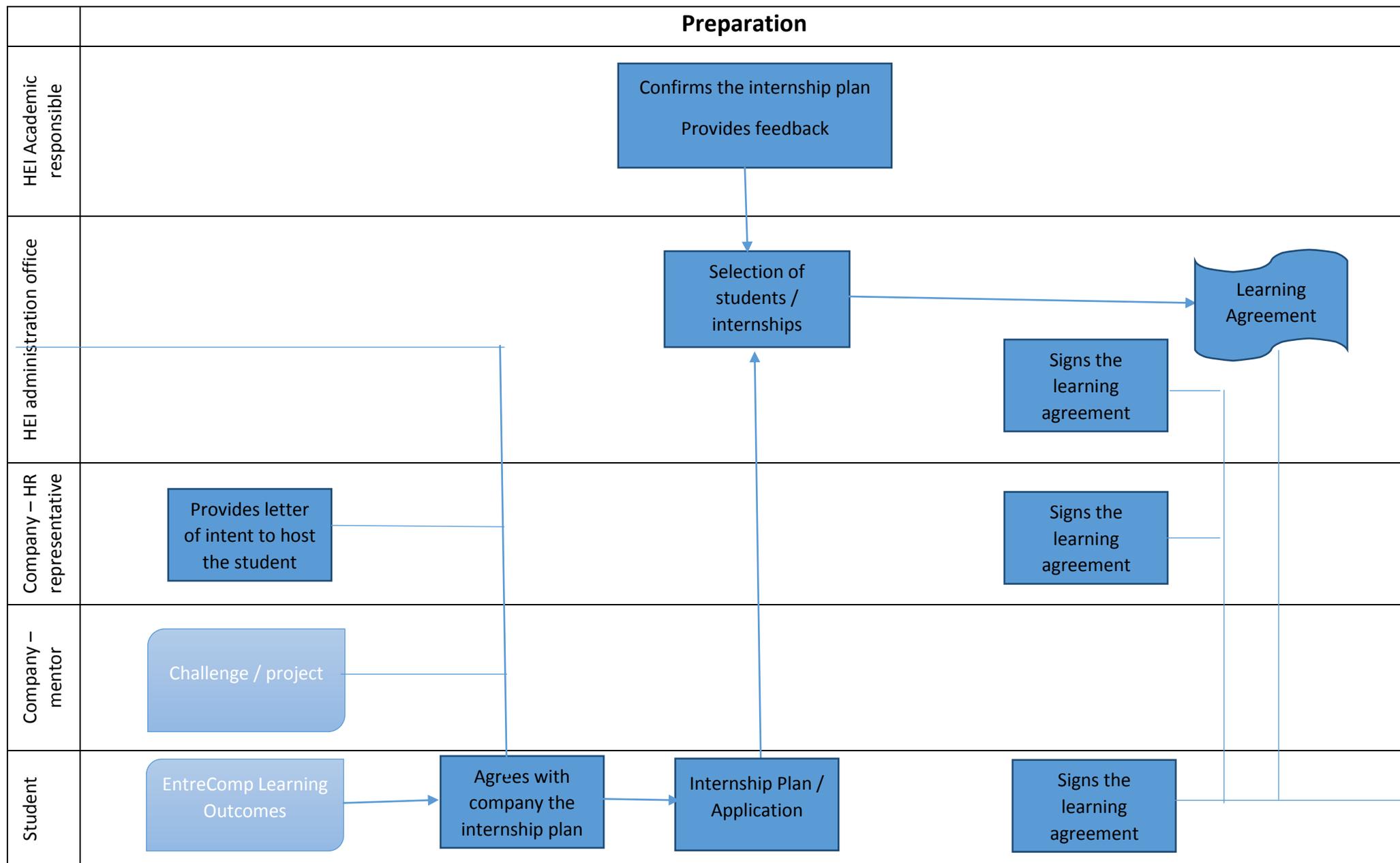
The HR responsible is responsible for liaison with HEI, offers internship positions for students and defines the company specific selection criteria. When a specific student is selected, he/she must sign the learning agreement and provide the necessary resources (human, data, infrastructure, etc.) for the implementation of the internship. He/she also prepares all necessary paperwork from the company side.

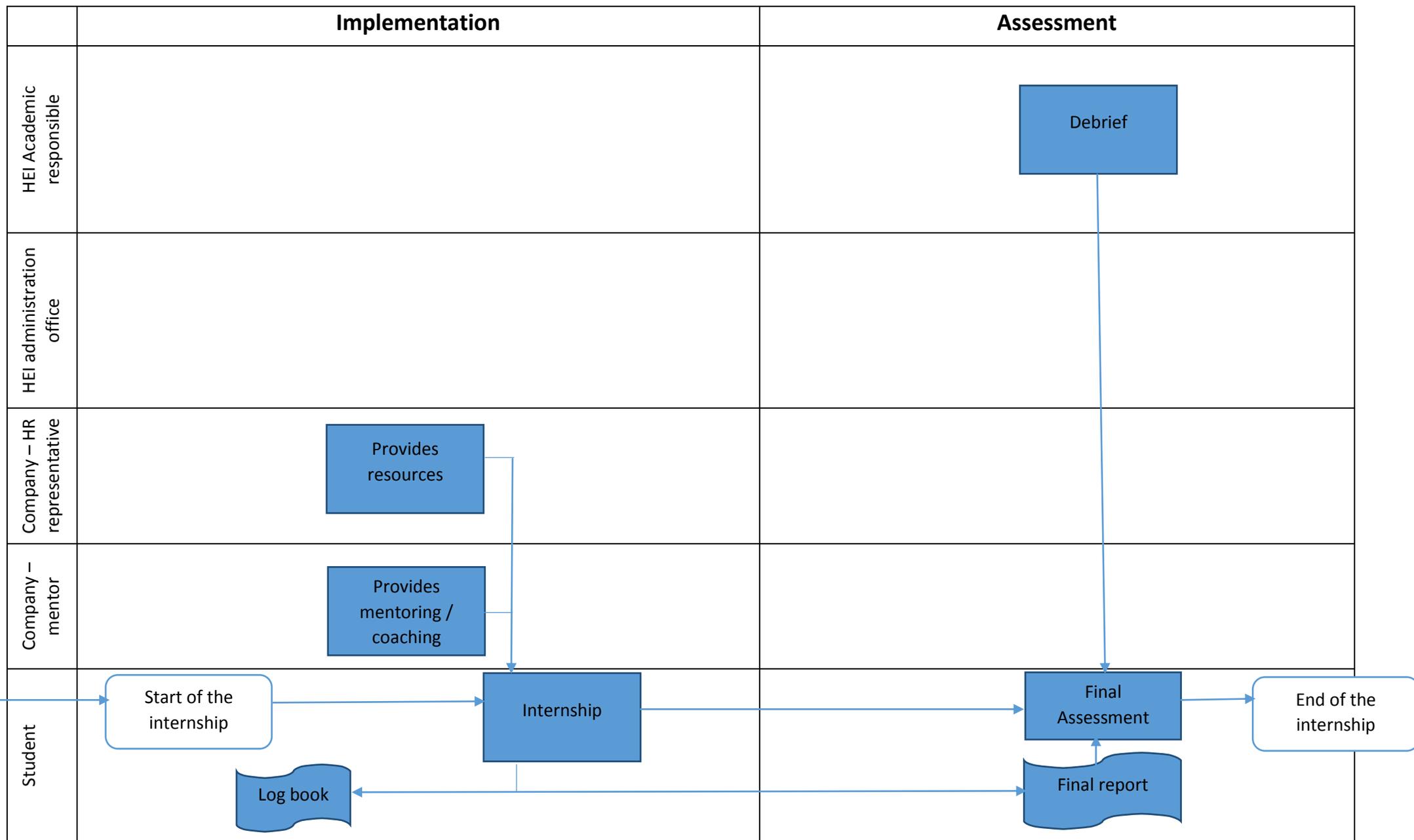
An overview of the involved persons' roles during the different stages of the EnterMode internship model can be seen in the following figure:



Figure 3: EnterMode model and roles









5. Challenge - Based Learning

Challenge-based learning proposes a collaborative framework, where students while trying to discover and solve challenges, gain in-depth knowledge and at the same time develop employability skills and entrepreneurial competences. Challenge-based learning namely uses challenges to frame learning experiences. When faced with a challenge, groups or individuals leverage experience, harness internal and external resources, develop a plan and push forward to find the best solution. Challenges enhance learning environments by adding experiential learning, self-regulated learning, passion, critical thinking and ownership. This student-centred approach allows interns to enact problems usually faced in the workplace and real world, whilst enhancing transferable skills such as teamwork, problem solving, risk assumption, public speaking, confidence, self-motivation, and creativity.

According to Nichols, Cator & Torres (2016), the challenge-based learning framework divides into three interconnected phases: Engage, Investigate and Act. Each phase includes activities that prepare the students to move on to the next stage. Supporting the entire process is an ongoing process of documenting, reflecting and sharing. In challenge-based learning the mentor's primary role shifts from dispensing information to guiding the construction of knowledge by his or her students around an initially defined problem. Students refine the problem, develop research questions, investigate the topic using a wide variety of primary source material, and work out a variety of possible solutions before identifying the most reasonable one.

Based on the above framework, the EnterMode internship model is divided into the following phases:

Phase 1: Engagement/preparation phase

The engagement phase starts during the preparation phase of the internship, where the challenge is defined, and continues during the internship with observation and job shadowing.

Mentors set the challenge to the interns. For the internship programme to respond specifically to the students' interests and needs, the mentors should describe a broad concept, a big idea, from which the students will move on to a concrete and actionable challenge.

The concept chosen by the mentor should be relevant for the development of entrepreneurial skills and, at the same time, relevant to the students and the company. The concept should be an open-ended one and represent a real need, a real problem, a project or anything within the interests of the company. The concept should also involve multiple ways in which it can be explored.

Following the establishment of the main challenge, the students will need to contextualise and personalise the concept, by developing the final concrete challenge, which needs a solution. Based on the final description of the challenge, the mentors will define the entrepreneurial competence that will be cultivated, based on the EntreComp framework.





Phase 2: Investigation

During the second stage students and mentors will build the foundation for solutions and entrepreneurial skills development.

Mentors will need to define the concrete actions, which will lead to the development of the entrepreneurial competences and the completion of the challenge, while students will develop the solution to the challenge. Prioritising and categorising will create an organised learning experience, which provides the method and foundation for the identification of solutions and the skills enhancement.

In parallel, the company will provide opportunities for job shadowing, support and mentoring, so that the student is able to observe the process followed by other employees and can design with the help of his/her mentor an action plan that will lead to the finalisation of the challenge given.

During this phase, the resources will also have to be defined, which will help in the implementation of the model and will provide the tools available to the students. In the EnterMode model, resources can come from three sources:

- Resources that the company provides – Incubation services. These resources stem from the company and include tangible resources e.g. office space, computers, stationery etc., as well as non-material resources e.g. time, knowledge, guidance, support etc.
- Resources mobilised by the student. These resources stem from the recipient of the training and are resources that will help him/her complete the challenge proposed. Such resources could be for example time, commitment, own network, research, social media etc.
- Resources gained from the serious game developed by the EnterMode project consortium. These resources are further explained in the following section of this model.

Phase 3: Into action

During this phase students select, develop and implement solutions, which lead to the completion of the challenge. The amount of time and resources available guides the depth and influences the implementation of the solutions. During this phase learning is independent and self-regulated, although mentors should offer guidance and support to the interns.

An essential part of this phase is also the monitoring and evaluation of the progress of students, according to goals set at the previous stages. Continuous monitoring is required in order to ensure that students develop and progress on the originally set entrepreneurial competences and that the challenge will come to an end during the timeframe set. Monitoring could also be used to guide the learning process.

Assessment should also provide feedback on the effectiveness of students' efforts and depth of their knowledge and skills acquired. Mentors should schedule regular meetings with students, to interpret feedback, clarify goals, process steps and encourage reflection.

Assessment can also be implemented by using different means:





- Assessment by trainers, the company mentor and the HEI academic responsible from the Higher Education Institution. The assessment will measure the acquirement and development of conceptual, technical and occupational skills as well as entrepreneurial competences.
- Self-assessment. This type of assessment measures the improvement and progress of entrepreneurial skills and it may have the form of self-reflection. Self-evaluation will help students realise their existing gaps and suggest ways to improve themselves.

Information on how to implement the principles of Challenge Based Learning at each stage and aspects that should be considered, as well as practical information and examples, can be found in the trainer's guide, which accompanies this document.





6. Incubation

During the Enter.Mode internships, companies must provide an environment for the students, where they will be able to develop their entrepreneurial skills. It needs to offer the necessary resources and support to enable the students to accomplish their tasks, while they monitor and evaluate students' performance and learning. The environment needs to respond to the student's interests and needs.

The intern companies could offer resources, training and educational support to interns, while contributing to the network of their own businesses and students. Companies could help to complete activities connected to entrepreneurship like spotting opportunities, creativity, mobilising resources, mobilising and working with others, being pro-active as well as planning & management. Most importantly, they can provide vital information to the students, such as financial risks connected with businesses, market potentials, risks, legal complications, insurance options and all other practical business-related cases, which students may be confronted with in their future. The main role of the companies is to increase the experience and the entrepreneurial skills of the young interns, to prepare them for entrepreneurship.

Actually, this environment provided for students in companies, has a lot of similarities with the incubation environment within an incubator for starting entrepreneurs. In the next paragraphs incubation will be explained as well as the activities included in a business incubator. This explanation will clarify why incubation is an important part of the internship model of Enter.Mode, developing entrepreneurial skills.

Incubation in general

The term 'incubator' originally derives from the agricultural sector and describes the process of the artificial hatching of eggs. An incubator is creating optimal circumstances for the eggs and the 'chickens-to-be' to grow. When applying this term in business, it focusses on the elaboration of starters and start-ups, while through guidance and providence of multiple services, young entrepreneurs can grow and contribute to society. A business incubator functions as an organisation providing an incubation environment to grow and become independent and successful, while offering services like working space, workshops, culture, coaching, networking and financial support.

The business incubator is a company which provides physical shared offices or flex-desks for young starters, which can be cost-effective plus it offers access to a network including like-minded starters, alumni, professionals, experts and established collaborations. The business incubator offers specialised services, access to potential clients, investors, possible stakeholders and advanced knowledge. In particular, services, in-house knowledge, mentoring and network are key elements of guidance in becoming successful as an entrepreneur or at least gain entrepreneurial knowledge and develop entrepreneurial competences. Tools which are being used by incubators are the availability of shared offices, providing workshops & masterclasses, one-to-one mentoring, coaching, cooperation with like-minded incubator attendees, peer reviewing, intervisions, network & knowledge sharing with experts and the business model canvas, creating a complete interchanging business model.





An incubator offers entrepreneurs all the tools for optimal development and growth, while the entrepreneurs themselves learn. Incubators don't preach or tell entrepreneurs exactly what to do. They encourage starting entrepreneurs to research, discover, make mistakes, learn from their mistakes and help them to get back on their feet. After a certain period spent in the incubator, a starting entrepreneur is ready to spread his/her wings and leave the incubator for the next phase.

Since incubation has proven to be an effective way of enabling entrepreneurs to grow, aspects of incubation will be used in the Enter.Mode internship model. In the next paragraph it will be discussed which elements of an incubator can be replicated in the Enter.Mode internship model and which are not possible to integrate.

How to apply incubation to the Enter.Mode internship model?

As a first step, it is crucial to identify the differences, between an actual business incubator and the internship company for Enter.Mode interns, which can set the limits the applicability of incubator practices to the Enter.Mode internships.

The biggest difference between an incubator and an internship company, is that guiding young entrepreneurs is the core business of a business incubator, whereas it is likely for an internship company to have other core activities. These companies are willing to spend some time in the development of a student, but they also need to focus on their main activities. Therefore, we need to be aware that the time of the internship company is limited, and we need to make good use of this precious time.

Another difference is that incubators guide entrepreneurs in their entrepreneurial behaviour with the target of growing into a stronger entrepreneur. For an internship company, it will be possible to contribute to the development of entrepreneurial behaviour, but they will not go to that next level of students really becoming an entrepreneur. They will teach them entrepreneurial competences which are also being appreciated by employers.

After researching the activities of incubators, taking into account the differences between incubators and internship employers, four main elements have been identified to be incorporated into the Enter.Mode internship model. These four elements are cooperation, mentoring, knowledge & experience sharing and networking. During the Enter.Mode internships, these areas will be focus areas, which will be monitored during the entire internship.

Cooperation

To provide a friendly incubation learning environment, companies will use multiple resources during the Enter.Mode internship of the Higher Education students. The location is suitable for the job space in order to provide a learning environment, which stimulates independent growth. Simultaneously this place must enable discussion and cooperation with others. For example, it would be optimal if





interns have the possibility to collaborate with multiple colleagues. This could be employees of the company, but you can also think of other interns. The advantage of allowing cooperation between interns and colleagues is that it helps to avoid isolation and social exclusion.

One of the first things that need to be discussed during the internship, are the vision and mission of the company. The internship company will share these and ask and allow interns to participate in company meetings. Here they can join the discussions etc. about all issues being encountered by the company. The intern can execute tasks with a gradual approach, starting with small tasks. These tasks must be realistic, real and motivating, to involve interns in essential businesses. For example, the intern can prepare a workshop for co-workers or other interns about the short- and/or long-term goals of the company. The intern gains knowledge about the company, practices his/her organising skills, learns how to take initiative and mobilise others, and at the same time, the company benefits from new insights, fresh ideas and additional acquaintances.

Mentoring

Complementary to the above resources, mentoring is one of the most important services through all phases of the Enter.Mode internship. Each intern needs a trusted person, who asks provocative questions, offers helpful critiques and provides data to be examined through another lens; this will be the mentor. The mentor keeps track of the learning objectives of the intern, while having the company vision in mind and he/she maintains an intensive relationship. By matching each intern to a mentor, a foundation will be established for competence and knowledge development. At the same time, a perfect learning environment will be created for self-reflection, feedback and evaluation, which is important for an effective, informative and valuable internship and preparation for future employment. One mentor can be assigned to multiple interns in the company. However, be careful with assigning too many interns to one mentor. Be very realistic about how much time the mentoring will cost and compare this to the time available by the mentor. Nothing is less effective than having a mentor, which does not have time for the intern. This will be frustrating for both the mentor, the mentee and also for the academic responsible. The mentor has close communication with the academic responsible in the HEI. The collaboration between the mentor and the academic responsible must be maintained to monitor progression of the intern, so personal adjustments can be made as well as interventions when necessary.

Knowledge and experience sharing

The third aspect of incubation practices, which can be applied in higher educational internships, is knowledge and experience sharing. The internship company needs to provide sufficient space and time for enhancing entrepreneurial skills and reflection by organising interventions. This can be done by regular weekly meetings, hosted by a mentor or academic responsible, where interns have to pitch about best practices, experiences of last week, plans for next week and which problems are faced. These interventions can be implemented both at the university and the internship company. To achieve as much effectivity as possible, interventions must be organised with multiple interns. This results in peer assessment and learning through (others') experiences. Subsequently, all weekly





activities, lessons learned and achieved goals are written down in a logbook to keep track of the learning curve and personal growth.

Another way of facilitating knowledge and experience sharing, is by organising interventions with different groups of people, not only interns. By including for example also colleagues, you make sure that views from different perspectives are taken into account and knowledge from different areas are all present.

Networking

The last, but definitely not the least aspect that will nurture the entrepreneurial spirit to students, is the opportunity to build and expand the network. During their internship, students will be employed in a company of their interest, chosen by them through a list of selection criteria, where they will get to know people with vast experience in the field. Those people will provide information and guidance to the students, additional to the mentor, and help them explore the ups and downs of the sector they choose, as well as opportunities and threats they will encounter in the future. Networking is an essential part of entrepreneurship, which will help students expand their circles of acquaintances, find out about job opportunities, and increase their awareness of news and trends. In this context, students will have the opportunity to develop relationships with people and companies they may do business with in the future. Networking plays a substantive role in using the internship benefits for own development and future purposes.





7. The Entrepreneurship Competence Framework (EntreComp)

The EntreComp framework in the EnterMode internship model

The EntreComp framework is utilised in the EnterMode internship model by providing a set of learning outcomes, on which the internship plan will be based. After spotting the competences on which the internship will focus, and their level, the company mentor can choose the learning outcomes provided by the EntreComp framework and their progression level. The activities which will be planned, should lead to the achievement of the learning outcomes chosen.

In the following chapters, we provide more information about the EntreComp framework, Competences and Learning Outcomes.

In the trainers' guide, we provide solutions on how to assess the existing competences of the students, as well as a table with the complete learning outcomes provided by the EnterMode framework and a table with specific examples of activities which can be implemented according to the learning outcomes chosen.

Entrepreneurship as a competence

To be able to enhance the entrepreneurial spirit and mind-set of internship students, firstly it is necessary to define what is entrepreneurship as a competence.

Entrepreneurship is viewed as the capacity to recognise and pursue opportunities in any environment. As such, it has an important role to play in all discipline areas and can apply to both commercial and non-profit endeavours. Entrepreneurship education is about enabling the student to develop creativity, innovation and risk-taking skills, as well as his/her ability to plan and manage projects in order to achieve objectives. Essentially, Entrepreneurship is about taking initiative and turning ideas into action.

The Entrepreneurship Competence Framework, developed by the Joint Research Centre (JRC) of the European Commission on behalf of the Directorate General for Employment, Social Affairs and Inclusion (DG EMPL), also known as EntreComp, offers a tool to improve the entrepreneurial capacity of European citizens and organisations.

EntreComp defines entrepreneurship as a transversal competence, which applies to all spheres of life: 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 also to starting up ventures (cultural, social or commercial). It enables citizens to nurture their personal development, to actively contribute to social development, to enter the job market as employee or as self-employed, and to start-up or scale-up ventures which may have a cultural, social or commercial motive.





According to the EntreComp framework, entrepreneurship competence is the ability to transform ideas and opportunities into action. Consequently, the word entrepreneurship implies the notion of being enterprising, emphasising the self-entrepreneurial impacts rather than the ability to build a business. The skills related to Entrepreneurship competence are mostly transversal, enabling people to become pro-active, independent and innovative in their personal life as well as in the workplace (Luppi, Bolzani & Terziena, 2019).

EntreComp framework

The EntreComp conceptual model is made up of two main dimensions: the 3 competence areas that directly mirror the definition of entrepreneurship as the ability to turn ideas into action that generate value for someone other than oneself; and the 15 competences that, together, make up the building blocks of the entrepreneurship as a competence for all citizens. The 3 competence areas are tightly intertwined: entrepreneurship as a competence stands above all three of these together. The 15 competences are also interrelated and interconnected and should be treated as parts of a whole, as shown in figure 4.

Figure 4. Main competence areas based on the Entrepreneurship Competence Framework





EntreComp competences

Table 1 shows the entrepreneurship competencies and learning outcomes broken down into their constituent parts. The order in which competences are presented does not imply a sequence in the acquisition process or hierarchy: none of the element comes first, and none of them is more important than the others.

The student doesn't have to acquire the highest level of proficiency in all 15 competences or develop the same proficiency across all the competences. Depending on the context of take-up, it is reasonable to expect that more emphasis may be put on some of the competencies and less on others, or else the competencies are streamlined to mirror an entrepreneurial process created to foster learning through entrepreneurship.

This can be seen as a starting point for the interpretation of the entrepreneurship competence, which over time will be further elaborated and refined to address the particular needs of specific target groups.

Table 1. Entrepreneurship competencies

Area	Competence	Hints	Description
IDEAS AND OPPORTUNITIES	Spotting opportunities	<ul style="list-style-type: none"> Identify opportunities to create value. 	<ul style="list-style-type: none"> Identify and seize opportunities to create value by exploring the social, cultural and economic landscape. Identify needs and challenges that need to be met. Establish new connections and bring together scattered elements of the landscape to create opportunities to create value.
	Creativity	<ul style="list-style-type: none"> Develop creative and purposeful ideas 	<ul style="list-style-type: none"> Develop several ideas and opportunities to create value, including better solutions to existing and new challenges. Explore and experiment with innovative approaches. Combine knowledge and resources to achieve valuable effects.





	Vision	<ul style="list-style-type: none"> • Work towards your vision of future 	<ul style="list-style-type: none"> • Imagine the future. • Develop a vision to turn ideas into action. • Visualise future scenarios to help guide effort and action.
	Valuing ideas	<ul style="list-style-type: none"> • Make the most of ideas and opportunities 	<ul style="list-style-type: none"> • Judge what value is in social, cultural and economic terms. • Recognise the potential an idea has for creating value and identify suitable ways of making the most out of it.
	Ethical & sustainable thinking	<ul style="list-style-type: none"> • Assess the consequences and impact of ideas, opportunities and actions 	<ul style="list-style-type: none"> • Assess the consequences of ideas that bring value and the effect of entrepreneurial action on the target community, the market, society and the environment. • Reflect on how sustainable long-term social, cultural and economic goals are, and the course of action chosen. • Act responsibly.
RESOURCES	Self-awareness and self-efficacy	<ul style="list-style-type: none"> • Believe in yourself and keep developing 	<ul style="list-style-type: none"> • Reflect on your needs, aspirations and wants in the short, medium and long term • Identify and assess your individual and group strengths and weaknesses. • Believe in your ability to influence the course of events, despite uncertainty, setbacks and temporary failures.
	Motivation and perseverance	<ul style="list-style-type: none"> • Stay focused and don't give up 	<ul style="list-style-type: none"> • Be determined to turn ideas into action and satisfy your need to achieve. • Be prepared to be patient and keep trying to achieve your





			<p>long-term individual or group aims.</p> <ul style="list-style-type: none"> • Be resilient under pressure, adversity, and temporary failure.
	Mobilising resources	<ul style="list-style-type: none"> • Gather and manage the resources you need 	<ul style="list-style-type: none"> • Get and manage the material, non-material and digital resources needed to turn ideas into action. • Make the most of limited resources. • Get and manage the competences needed at any stage, including technical, legal, tax and digital competences (for example through suitable partnerships, networking, outsourcing and crowdsourcing).
	Financial and economic literacy	<ul style="list-style-type: none"> • Develop financial and economic know how 	<ul style="list-style-type: none"> • Estimate the cost of turning an idea into a value-creating activity. • Plan, put in place and evaluate financial decisions over time. • Manage financing to make sure your value-creating activity can last over the long term.
	Mobilising others	<ul style="list-style-type: none"> • Inspire, enthuse and get others on board 	<ul style="list-style-type: none"> • Inspire and enthuse relevant stakeholders. • Get the support needed to achieve valuable outcomes. • Demonstrate effective communication, persuasion, negotiation and leadership.





INTO ACTION	Taking the initiative	<ul style="list-style-type: none"> Go for it 	<ul style="list-style-type: none"> Initiate processes that create value. Take up challenges. Act and work independently to achieve goals, stick to intentions and carry out planned tasks.
	Planning and management	<ul style="list-style-type: none"> Prioritise, organise, follow-up 	<ul style="list-style-type: none"> Set long-, medium- and short-term goals. Define priorities and action plans. Adapt to unforeseen changes.
	Coping with uncertainty, ambiguity and risk	<ul style="list-style-type: none"> Make decisions dealing with uncertainty, ambiguity and risk 	<ul style="list-style-type: none"> Make decisions when the result of that decision is uncertain, when the information available is partial or ambiguous, or when there is a risk of unintended outcomes. Within the value-creating process, include structured ways of testing ideas and prototypes from the early stages, to reduce risks of failing. Handle fast- moving situations promptly and flexibly.
	Working with others	<ul style="list-style-type: none"> Team up, collaborate and network 	<ul style="list-style-type: none"> Work together and co-operate with others to develop ideas and turn them into action. Network. Solve conflicts and face up to competition positively when necessary.
	Learning through experience	<ul style="list-style-type: none"> Learning by doing 	<ul style="list-style-type: none"> Use any initiative for value creation as a learning opportunity.





			<ul style="list-style-type: none"> • Learn with others, including peers and mentors. • Reflect and learn from both success and failure (your own and other people's).
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Entrepreneurship as a competence is developed through action by individuals or collective entities to create value for others. Hence, entrepreneurial learning advances through two aspects:

1. Developing increasing autonomy and responsibility in acting upon ideas and opportunities to create value;
2. Developing the capacity to generate value from simple and predictable contexts up to complex, constantly changing environments.

EntreComp progression model

There is not a linear sequence of steps that must be taken to become proficiently entrepreneurial. Instead, as it is visible in the progression model, the boundaries of individual and collective entrepreneurial competencies can be pushed forward, to achieve greater impact through value creating endeavours. This Progression Model aims to provide a reference for the development of proficiency starting from value creation achieved through external support, up to transformative value creation. It consists of four main levels: Foundation, Intermediate, Advanced and Expert. Each level is in turn split into two sub-levels, as illustrated in Table 2. At Foundation level, entrepreneurial value is created with external support. At Intermediate level, entrepreneurial value is created with increasing autonomy. At Advanced level, responsibility to transform ideas into action is developed. At Expert level, the value created has considerable impact in its reference domain.

These proficiency levels provide a way for the reader to look at the learning outcomes. It aims to be comprehensive and to offer a tool that can be adapted to different needs. It is not prescriptive and it does not suggest that all students should acquire the highest level of proficiency in the competences, or that they should reach the same proficiency across all the competences. If the entrepreneurial learning experience targets the employees of a shoe-making district in a certain region, the programme could focus at an advanced level, for instance, in the development of proficiency in competencies like 'spotting opportunities', 'vision', 'mobilising resources', 'mobilising others', 'planning and organising'. At the same time, it would be possible to achieve an intermediate level of proficiency in 'financial economic literacy'. It is essential to choose which skills prioritise depending on the needs of the students. So, returning to the previous example, we can choose to prioritise the skill to understand the financial viability of their ideas, rather than the development of double-entry bookkeeping skills, which would require an advanced level of proficiency.





Table 2. EntreComp Progression Model.

PROGRESSION MODEL			
Foundation		Intermediate	
Relying on support from others		Building independence	
Under direct supervision	With reduced support from others, some autonomy and together with my peers	On my own and together with my peers	Taking and sharing some responsibilities
Level 1. Discover	Level 2. Explore	Level 3. Experiment	Level 4. Dare
Discover your qualities, potential, interests and wishes. Recognise different types of problems and needs that can be solved creatively.	Explore different approaches to problems, concentrating on diversity and developing social skills and attitudes.	Develop critical thinking and experiment with creating value, for instance through practical entrepreneurial experience.	Turn ideas into action in 'real life' and take responsibility for this.
Advanced		Expert	
Taking responsibility		Driving transformation, innovation and growth	
With some guidance and together with others	Taking responsibility for making decisions and working with others	Taking responsibility for contributing to complex developments in a specific field	Contributing substantially to the development a specific field
Level 5. Improve	Level 6. Reinforce	Level 7. Expand	Level 8. Transform
Improve your skills for turning ideas into action. Take increasing responsibility for creating develop knowledge about entrepreneurship.	Work with others, using the knowledge you have to generate value, dealing with increasingly complex challenges.	Focus on the competences needed to deal with complex challenges, handling a constantly changing environment where the degree of uncertainty is high.	Focus on emerging challenges by developing new knowledge, through research, development and innovation capabilities to achieve excellence and transform the ways things are done.





In table 3, you can see the EntreComp overview which depicts the 3 areas and all the 15 competences, but it develops them only on the three levels of proficiency that apply to all citizens: the foundation, intermediate and advanced levels.

Table 3. EntreComp Overview

Area	Competence	Levels of proficiency		
		Foundation	Intermediate	Advanced
Ideas and opportunities	Spotting opportunities	Students can find opportunities to generate value for others.	Students can recognise opportunities to address needs that have not been met.	Students can seize and shape opportunities to respond to challenges and create value for others.
	Creativity	Students can develop multiple ideas that create value for others.	Students can test and refine ideas that create value for others.	Students can transform ideas into solutions that create value for others.
	Vision	Students can imagine a desirable future.	Students can build an inspiring vision that engages others.	Students can use their vision to guide strategic decision-making.
	Valuing ideas	Students can understand and appreciate the value of ideas.	Students understand that ideas can have different types of value, which can be used in different ways.	Students can develop strategies to make the most of the value generated by ideas.
	Ethical and sustainable thinking	Students can recognise the impact of their choices and behaviours, both within the community and in the environment.	Students are driven by ethics and sustainability when making decisions.	Students act to make sure that their ethical and sustainability goals are met.
Resources	Self-	Students trust their	Students can make	Students can





	awareness and self-efficacy	own ability to generate value for others.	the most of their strengths and weaknesses.	compensate for their weaknesses by teaming up with others and by further developing their strengths.
	Motivation and perseverance	Students want to follow their passion and create value for others.	Students are willing to put effort and resources into following their passion and create value for others.	Students can stay focused on their passion and keep creating value despite setbacks.
	Mobilising resources	Students can find and use resources responsibly.	Students can gather and manage different types of resources to create value for others.	Students can define strategies to mobilise the resources they need to generate value for others.
	Financial and economic literacy	Students can draw up the budget for a simple activity.	Students can find funding options and manage a budget for their value-creating activity.	Students can make a plan for the financial sustainability of a value-creating activity.
	Mobilising others	Students can communicate their ideas clearly and with enthusiasm.	Students can persuade, involve and inspire others in value-creating activities.	Students can inspire others and get them on board for value-creating activities.
Into action	Taking the initiative	Students are willing to have a go at solving problems that affect their communities.	Students can initiate value-creating activities.	Students can look for opportunities to take the initiative to add or create value.
	Planning and management	Students can define the goals for a simple value-creating activity.	Students can create an action plan, which identifies the priorities and milestones to	Students can refine priorities and plans to adjust to changing circum-





			achieve their goals.	stances.
	Coping with uncertainty, ambiguity and risk	Students are not afraid of making mistakes while trying new things.	Students can evaluate the benefits and risks of alternative options and make choices that reflect their preferences.	Students can weigh up risks and make decisions despite uncertainty and ambiguity.
	Working with others	Students can work in a team to create value.	Students can work together with a wide range of individuals and groups to create value.	Students can build a team and networks based on the needs of their value-creating activity.
	Learning through experience	Students can recognise what they have learnt through taking part in value-creating activities.	Students can reflect and judge their achievements and failures and learn from these.	Students can improve their abilities to create value by building on their previous experiences and interactions with others.





8. Learning Outcomes

According to Cedefop (2017), learning outcomes are statements of what a learner is expected to know, be able to do and understand at the end of a learning sequence and play an increasingly important role in efforts to improve the quality and relevance of education and training in Europe. Learning outcomes statements help to clarify programme and qualifications intentions and make it easier for those involved to work towards these expectations.

Learning outcomes are also used as a common reference point in the European Qualification Framework in order to facilitate comparison and transfer of qualifications between countries, systems and institutions. The European Qualification Frameworks defines eight level of qualifications, from the basic level 1 to the advanced level 8, in order to improve the clearness and transferability of qualifications. Table 4 shows the EQF descriptors for learning outcomes, at Levels 6-8, which correspond to Higher Education levels.

Table 4. EQF descriptors for learning outcomes

EQF descriptors for learning outcomes			
	Knowledge	Skills	Responsibility and autonomy
EQF level 6	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups
EQF level 7	Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research Critical awareness of knowledge issues in a field and at the interface between different fields	Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams





EQF level 8	Knowledge at the most advanced frontier of a field of work or study and at the interface between fields	The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research
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Source: Cedefop. 2017

Learning outcomes help to clarify programme and qualifications intentions and make it easier for those involved to work towards these expectations. They bring benefits for the student, since they clarify what he/she is expected to know, understand, and be able to do at the end of a learning sequence or a programme; for the instructor, since they will help him/her to orient the programme, to select methods, and to orient the learning process; for labour market, since they clarify what are the skills needed and to respond to these in a relevant way; for the training institution, since they provide an important reference point for quality and they provide important input to the continuous review and development; and for the assessor, since learning outcomes approach supports assessment by clarifying the criteria for success/failure and performance. Their relevance lies in the transparency they offer, allowing to verify the match between society's needs and the qualifications offered within education and training. Learning outcomes need to focus always on the student and on what he/she is expected to know, be able to do, and understand in terms of knowledge, skills, and competencies.

The relevance of learning outcomes statements to the students depends on their ability to specify and balance general knowledge subjects with occupation-specific skills and transversal competencies. This is possible through a constant dialogue between vocational education and training stakeholders. Learning outcomes should be written with simplicity and concision, limiting the number of statements and avoiding too much detail. While learning outcomes provide an important orientation for students and institutions, they do not aim fully to predict and control the learning process.

However, learning outcomes are not always outcomes of learning, but rather desired targets. That is why there needs to be a clarification of desired and achieved learning outcomes. In order to achieve actual learning outcomes and create a continuous improvement process, there needs to be an interaction between what was intended and what is actually achieved. Learning outcomes statements help to clarify programme and qualifications intentions and make it easier for those involved to work towards these expectations. They bring benefits for the student, since they clarify what he/she is expected to know, understand, and be able to do at the end of a learning sequence or a programme; for the instructor, since they will help him/her to orient the programme, to select





methods, and to orient the learning process; for labour market, since they clarify what are the skills needed and to respond to these in a relevant way; for the training institution, since they provide an important reference point for quality and provide important input to the continuous review and development; and for the assessor, since the learning outcomes approach supports assessment by clarifying the criteria for success/failure and performance. Their relevance lies in the transparency they offer, allowing to verify the match between society's need and the qualifications offered within education and training. Not all learnings, however, can be fully defined in learning outcomes. The learning process can rarely be fully predicted and described; it has intended as well as unintended, desirable as well as undesirable outcomes. Learning outcomes need to focus always on the student and on what he/she is expected to know, be able to do, and understand, in terms of knowledge, skills, and competencies (Cedefop, 2017).

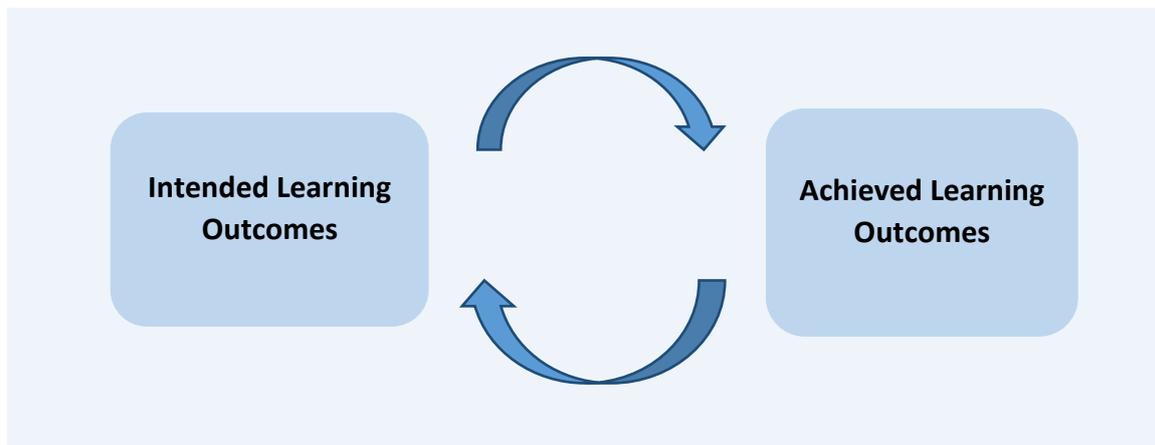


Figure 5. Relationship between intended and achieved learning outcomes

Source: Cedefop, 2017

Competences

Skills are described, as human characteristics which can develop through education, training and experience although personal traits play an important role in developing some skills (OECD, 2011). Competences are broader than knowledge and skills (Rychen & Salganik, 2000). Competences are not personal constructs or traits but rather dispositions that can be attributed to individuals, teams and organisations. Competences are not dependant on personal traits but can be learnt, depending on the quantity and quality of learning opportunities (Rychen & Salganik, 2000).

According to Cedefop (2012) achieved learning outcomes is what we call competences., which are validated through the ability of the learner autonomously to apply knowledge and skills in practice, in society and at work (Cedefop, 2012). The definition provided by the 2008 recommendation on the EQF can be seen as a compromise pointing towards a shared approach: 'Competence means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development' (European Parliament and Council of EU, 2008).





Competences are more associated with a view of individuals as (potential) parts of the labour force and a commitment to optimising the individual’s efficiency in a job. On the other hand, learning outcomes may also embrace general knowledge and ethical, cultural, and social skills that go beyond the needs of the labour market. For this reason, it is important to see the defining of learning outcomes as one key step towards defining competences (European Commission, 2011).

Defining and writing learning outcomes

When writing learning outcomes, one has to remember that the focus must always remain on the student and what he/she is expected to know, be able to do and understand. Another aspect you need to consider is the distinction between desired learning outcomes and achieved learning outcomes (competences). The latter can be only identified through the learning process, by continuous assessment of achieved learning. Furthermore, learning outcomes have to be defined and written within a broader context where learning inputs are considered.

Another aspect mentors need to consider when defining learning outcomes is simplicity. Too much detail and overly complex statements prevent students, teachers and mentors from relating to the statements. Defining and writing learning outcomes should be treated as an interactive process, starting from overall objectives and moving stepwise towards specific statements for units and assessment.

As previously explained, learning outcomes are statements that describe significant and essential learnings that students have achieved, and can reliably demonstrate at the end of a course. For this reason, learning outcomes should/must be expressed in a manner that refer to individual students in the third person and should/must start with the statement:

“The student will... (Be able to; define; identify...)

Table 5. Basic structure of learning outcomes - Example

Basic structure of learning outcomes			
...should address the student.	...should use an action verb to signal the level of learning expected.	...should indicate the object and scope (the depth and breadth) of the expected learning.	...should clarify the occupational and/or social context in which the qualification is relevant.
Examples			
The student...	Will be able to take action...	...dealing with problems...	...that affect his/her surroundings.

Source: Cedefop. 2017





Things that mentors have to consider when writing learning outcomes are: (a) what do I intend students to learn (what learning outcomes do I want them to achieve)? (b) what methods and supplies can be used to encourage students to behave in ways that are likely to achieve these outcomes? (c) what assessment tasks and criteria will tell me that students have achieved the outcomes I intend? (d) how can formative and summative assessment be combined to support the learning process and to clarify whether outcomes have been achieved?

Biggs (2003) identifies the main steps in writing learning outcomes: define the intended learning outcomes; choose activities likely to lead to, help and encourage students to attain these intended learning outcomes; engage students in these learning activities through processes and gamification technics; assess what students have learned using methods that enable students to demonstrate the intended learning and, in the case of formative assessment, give feedback to help students improve their learning.

In the trainers' guide, we provide a table with the complete learning outcomes provided by the EnterMode framework, which you can use for the planning of the internship programme.

Assessment of learning outcomes

After defining the learning outcomes, mentors need to define the methods by which these outcomes are going to be assessed as well as the assessment criteria. Assessment criteria set the standards that must be met in order to demonstrate that the learning outcomes have been achieved. When defining assessment criteria and methods, mentors need to ensure that learning outcomes, activities aimed to achieve them and assessment tasks are all connected.

When writing assessment criteria, there are some points which need to be considered. Each learning outcome needs to meet to some at least extent one assessment criterion. Furthermore, assessment criteria need to be written in detail, to support the assessment of the outcome.

Do not forget that a clear definition of the targeted competences, their level and the learning outcomes needs to be present before deciding about the assessment methods and criteria.

The assessment of learning outcomes has four main determinants:

- First, the person who will do the assessment has to be defined.
- Second, we need to define how the outcomes are going to be assessed.
- Third, we need to define the when.
- Last, we need to define the procedures by which the assessment will be conducted. Defining procedures ensures the reliability of the assessment results and quality.

As stated above, assessment criteria define the standards, while assessment methods are the tools by which assessment of learning outcomes will be conducted. There are multiple ways of assessing learning outcomes and a combination of those is encouraged. Assessment methods can be either direct or indirect. Direct means that students need to demonstrate what they've learned, while indirect means that they have to do a self-reflection of what they have learned. For each learning outcome, mentors need to identify the assessment method that best fits and will provide the most useful information.





Generally, there are three types of assessment of learning outcomes.

- Diagnostic assessment, before the training
 - Tests the student's existing knowledge
 - Provides standards in order to measure progress
- Formative assessment, is the assessment for learning
 - It is usually used during the process of learning.
 - Provides feedback to students and contributes to students planning future learning goals
- Summative assessment, is the assessment of learning
 - Assesses learning at the end of a programme/module
 - Generates a mark/grade
 - Assesses only a sample of learning outcomes

The EnterMode model focuses on the assessment of competences, rather than concrete knowledge. This means that assessment should also reflect how the competences developed from one stage to the other.

Assessment methods are the strategies and tools, which are used to determine whether students have reached the desired level of the competences we have set out at the internship planning, and determine whether students have reached the desired learning outcomes. There are numerous types of assessment methods and their selection depends on the learning outcomes to be measured. Different assessment methods allow the mentors to assess different aspects of learning. When deciding about the assessment methods, one can use a combination of methods.

Examples of assessment methods:

- Self-assessment (Establishing appropriate standards to apply during work and judge whether they have been met, Promotes reflection and metacognition)
- Standardised tests
- Peer assessment
- Portfolio assessment
- Observations
- Case studies
- Essays
- Interviews
- Open ended tests (objectives tests, where there is no right or wrong answer)
- Focus groups
- Reflective diary
- Presentations
- Production of artefacts etc.





9. Gamification and challenge based learning

According to the experts, 'gamification is the use of game design elements in non-game contexts' (Deterding, et al., 2011). Education is a typical non-game context.

Gamification is a relatively new learning approach, which helps advance knowledge and engage students in the learning process. Gamification as a learning practice, is used to enhance the motivation and active engagement of students. In particular, gamification is the use of game elements, which serve as tools that you can work with to implement specific activities in the framework of the internship, which will engage students and help them reach their final goal, the acquisition of entrepreneurial competences and skills.

Enjoyment gained through gamification heightens engagement and retention, where play and learning are strictly connected. The challenge-based learning methodology is enhanced with gamification elements that will provide the right motivation and engagement and will lead the interns to complete their missions successfully.

The students are invited to work on quests to accomplish a specific goal (challenge) by choosing actions and experimenting along the way. They can earn badges and experience points, when they make certain progress or achievements. The gamification may include i.e. constrains (limited resources, time), rewards (achievement badges, extra resources), ownership (autonomy, choices), and luck (new opportunities and obstacles).

There are various gamification elements that can be applied to the internship and be combined with the challenges set. Some examples of gamification elements are: curiosity/mystery, tracking progress/feedback, time pressure, competition, guilds, exploration, customisation, smaller challenges/quests, voting, leader boards, prizes etc.

All these elements can be combined and applied during the implementation of the challenge-based learning. As students work for the completion of their main challenge and the final delivery of the results, mentors can use the above elements to intrigue students' interest and motivate them to reach their final goal. Gamification elements are used in order to motivate students and ensure their active participation in the main challenge.

The EnterMode serious game

As stated before, the EnterMode consortium partners have developed an online serious game to be applied during the internship to support the acquisition of entrepreneurial skills and mind-set. The serious game will develop six competencies: Creativity; Vision; Mobilising resources; Spotting opportunities; Coping with uncertainty, ambiguity and risk; Working with others. The serious game is offered online, is accessible to students undertaking their internships and provides gamification elements to the whole process, thus giving motivation to students.

The online game is designed in a way that it allows it to be parameterised for different contexts and situations, thus it can be applied during different internship programmes. It also incorporates





learning analytics mechanisms, which aim at a better understanding and improvement of the learning environment. Learning analytics will allow the selection of data both at individual level and at institutional level, thus allowing both HEIs and companies to effectively match learning offers with the real needs of students.

The serious game combines entertainment with knowledge transfer and its purpose is to support the interns to improve their competences and to understand the notion of entrepreneurship. The serious game combines gamification and technology in a learning context. It introduces a challenge, stirs curiosity, proffers control and triggers imagination. The feeling of control that the serious game offers makes students guide their progress towards the desired goal based on the feedback received. Moreover, the virtual environment allows the students to increase experiences and discover skills and knowledge. The research each student undertakes to complete a quest, leads him/her to overcome certain difficulties, which could not be resolved in the real world. Meanwhile, mistakes made by students are not seen as failures but opportunities to receive feedback, while players have the ability to track the consequences of their decisions.

One of the biggest challenges in the development of a serious game is to create and maintain the flow process. If the level of the challenge is too high and a player's level of skills is too low, it can cause anxiety. On the other way, if the game is very easy, boredom can occur.

To eliminate this, there is a framework story and several minigames (quizzes, decision trees, memory games and drag and drops) which have different difficulty levels.

The framework story: The player's final goal is to have a successful job interview at the end of the game, but it can be achieved only if he/she completes tasks for high scores and receives badges during the game. The player can choose from three mentors, who guide them through the whole game, give feedback and extra information that can be used later during the interview.

The following gamification elements are embedded into the online serious game:

Curiosity/mystery: The serious game proposes challenges and quizzes that foster curiosity and propose research.

Tracking progresses/feedback: It is motivating for the students to see their progress toward levels of mastery, which are aligned with skills and if they are also able to see the knowledge they are developing. Learning analytics are also used to track and direct learning progress.

Time pressure: The serious game has time constraints on specific challenges and quizzes, which helps students focus more on the activity and make sure they get the project done in the time period allotted.

Competition: Students' points are displayed on a leader board, so they can compare their results with those of other players.

Avatars: Students can choose their own character and a mentor guiding them through the game.

Quests: The game has a series of quests, which can be completed individually. There are also series of quests which are interconnected and lead to the acquisition of a specific award/ competence according to the EntreComp framework.





Leader board: Display progress on activities, to encourage to perform better.

Awards: Students receive badges as rewards for completing specific tasks. Badges are awarded, when a competence according to EntreComp framework has been acquired.

Choices: Students have different choices and there is more than one way to complete decision trees. Students have also the opportunity to track the consequences of their choices.

Ownership: Students are granted full ownership of their learning progress and are given autonomy to plan their steps: e.g. the order of tasks to be completed can be chosen by them.

Losses: Students can lose a challenge due to time constraints or false choices, but losses are an opportunity to receive positive feedback, which will help them on their next try.





10. The EnterMode Community of Practice

According to Wenger “communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly”(Wenger, 2010). They build a common stock of knowledge, accumulate expertise in their domain, and develop their shared practice by interacting around problems, solutions, and insights.

A Community of Practice (CoP) is a learning partnership among people who have learned to do something over time and have developed a shared practice, whereas practice is a historically developed way to do something. That can be professionals who deal with issues and problems they face in the workplace, pupils that are concerned with school matters, or even street gangs sharing a repertoire of survival strategies (Wenger, 2010).

Different to course-based learning, the body of knowledge of a CoP develops over a complex landscape of practice, and results in a ‘regime of competence’. Learning is defined as a process of deepening participation in the CoP, to align what a person is doing with what others are doing.

The CoP model of ‘social learning’ builds on a range of assumptions about modern societies, such as changing modes of knowledge production and circulation, which demand new learning models. In the old paradigm learning starts with something that’s known. It’s then transmitted to someone who doesn’t know it. But in an increasingly complex and dynamic world this simple view doesn’t work anymore, since students are required to ‘improvise, solve problems, strategise, jump on opportunities, and bring others along. Learning that matters today is social, in real time, and inventive. More often than not, what we need to learn is not yet known’ (Wenger & Trayner, 2015).

The EnterMode Community of Practice is defined to support the development, sharing and critical reflection of entrepreneurship practice as well as socialising newcomers into the world of business, and to facilitate the knowledge flow between higher education and enterprises for organisation of internships and skills building. To this purpose the partnership provides a space as well as tools for learning and collaboration between higher education teachers and companies’ mentors that are called to develop entrepreneurial skills to students, adopt the EnterMode model and organise students’ internships.

The EnterMode CoP is hosted in DISCUSS, a European internet platform for virtual Communities of Practice. DISCUSS platform offers a rich variety of tools that CoP members can use to create content, share knowledge and collaborate in accordance with the roles and rules set out for participation. Technology supports the tasks of saving, organising, searching and providing content, coordinating communication and enforcement of community rules.

CoPs are ‘human institutions’, which by definition are natural, spontaneous, and self-directed. So, they hardly can be designed along with traditional principles of organisational design. Different to organisations, participation is voluntary and personal and their members become informally bound by the value that they find in learning together; membership does not relate to fixed roles or tasks; activities and knowledge are shared, but do not become part of tasks; CoPs are not driven by deliverables with shared goals, milestones and results.





However, it is also true that Virtual Communities of Practice (VCoPs) do follow organisational principles, without which coordination and collaboration would not be possible. VCoPs employ organisational structures and elements similar to those of real world organisations, such as roles, rules, members or shared definitions and terms as the common language members refer to when interacting. Member roles ensure the legitimacy of activities and to the community signal the capabilities of the owner, community rules control for the legitimacy of membership, normative adequacy of interactions and help to avoid undesirable or offensive action, member profiles allow for the attribution of activities and contributions to persons, selection of contacts with similar or complementary expertise, and to establish connections with other community members. To sum up, all these elements support structured interaction between the members and delimit the range of potential activities and repercussions to such an extent, that the community can develop trust and collective identity (Preisinger-Kleine, 2013).

Roles in EnterMode Community of Practice

The allocation of roles is key to every virtual community. Generally speaking, each role is an abstraction of a class of community participants and is described in terms of rights and obligations as well as required capabilities as a prerequisite for role performance. As for the inception stage of the EnterMode VCoP basic member roles have been defined: administrator, moderator, facilitator and member. Administrators and moderators constitute the community management. They ensure the functioning of the community as a whole with regard to both technical and organisational aspects.

While management, moderator and facilitator roles are assigned, the member role is automatically given to users, when they sign on to the EnterMode community. It does not give any special right by default but can be edited by administrators to add privileges that might be desirable in certain situations.

The administrator role is automatically given to the creator of a community and gives him/her total control over the community management including configuration and content management. Three persons from the project partnership have been appointed moderators. Their tasks are planning and implementation of community activities, take care of community progress, scaffold the development of leadership, emergence of roles and tasks among the members and jointly with the facilitators mediate different interests and potential conflicts between community members.

Facilitators are responsible for a wider range of tasks emerging from the EnterMode knowledge flow cycle (Figure 4).

EnterMode Community of Practice knowledge flow

The EnterMode knowledge flow cycle is defined to work along four dimensions: knowledge resources, knowledge sharing, knowledge management and knowledge transfer. Each stage in order to function properly requires a set of complementary moderator / facilitator activities.

1) Managing knowledge resources

VCoPs combine two types of knowledge resources: People and knowledge objects. The core task of facilitators is to find out about the needs of members, what they can bring into the community, and to identify and build relationships with core members. They, on the other hand, ensure that



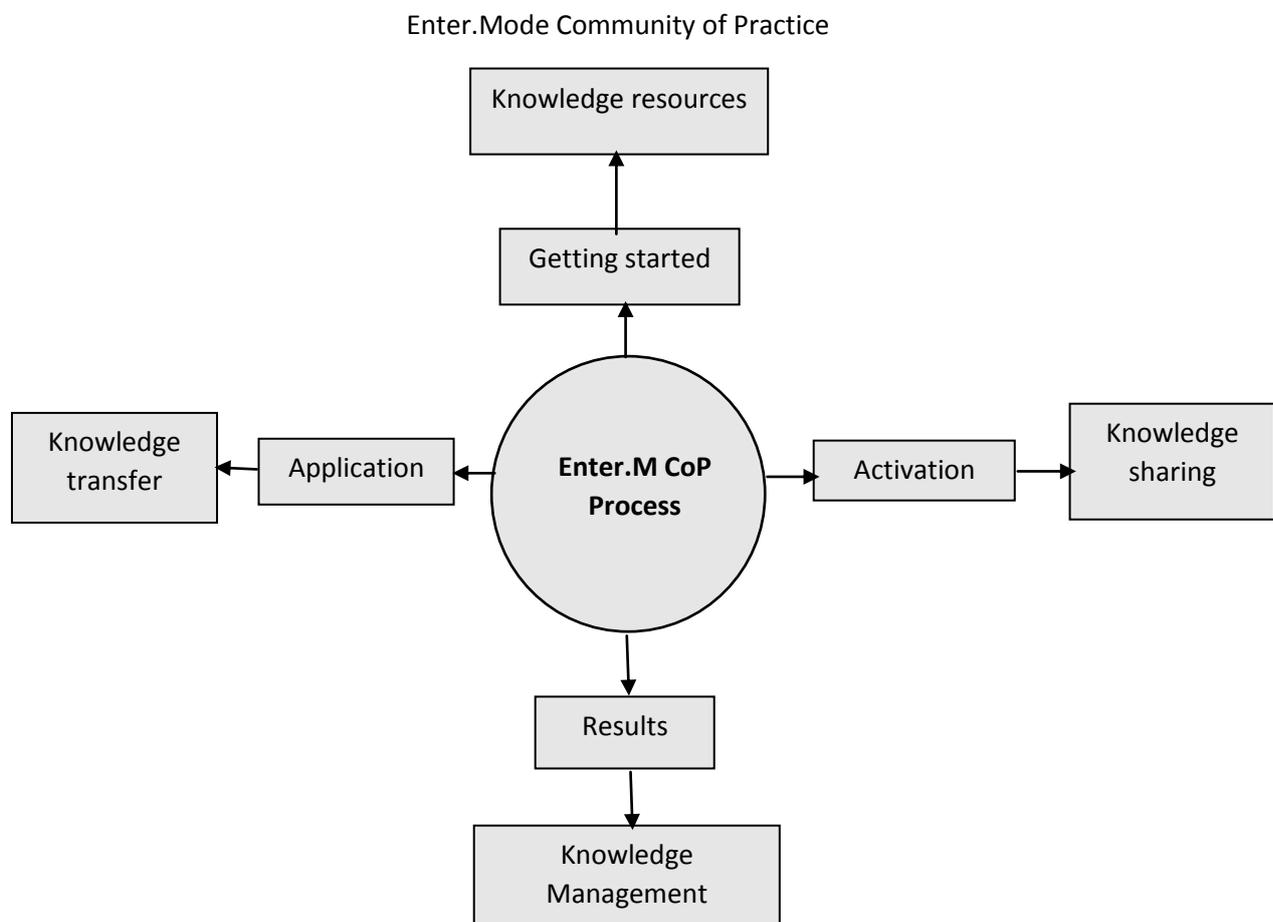


knowledge objects are properly managed. We refer to objects such as OERs, photos, videos, audio files, text documents, links and embedded web content (presentations, slides, video, articles, blogs and podcasts).

2) Facilitate knowledge sharing

Facilitators stimulate community action. They prompt interventions and reflection by putting questions, foster mutual learning, invite different levels of participation, create value, check for community health, expand the community and jointly with moderators organise events.

Figure 6: EnterMode knowledge cycle



3) Knowledge Management

Facilitators foster productivity and organise results. They ask what works and why, about difficulties faced, success factors and if the good practice is commonly agreed.

4) Knowledge Transfer

Facilitators ensure that the community capitalises on knowledge gained. They stimulate feedback from organisers of internships about lessons learned and recommendations for improvement of internship practice: What should we keep? What should we skip? What should we add?





As for the design, the seven principles for ‘cultivating’ communities of practice were adopted (Wenger et al, 2002): 1. Design for evolution, 2. Open dialogue between inside and outside perspectives, 3. Inviting different levels of participation, 4. Development of both public and private community spaces, 5. Focus on value, 6. Combination of familiarity and excitement, 7. Creating a rhythm for the community. However, the partnership has adapted these principles to the specific objectives of the EnterMode CoP.





11. Learning Analytics

Learning analytics is an educational application of web analytics aimed at student profiling, a process of gathering and analysing details of individual student interactions in online learning activities (NMC Horizon report, 2016).

However, research into learning analytics so far is focused on ‘predicting and steering the learning progress of individual students under the premise that an institutional learning management system (LMS) is deployed. Support is facilitated by recommendations of learning content or learning activities’ (Klamma 2013). As a consequence of this, learning analytics have been primarily adopted in areas of formalised learning, while there is little knowledge about their functioning in informal learning settings such as Communities of Practice, for which neither canonical training materials, nor LMS are available. Klamma points out that ‘the information provided by standard means of learning analytics is completely useless for informal analysis, regardless if it takes place on an individual or a community level, because in informal learning neither the use of a LMS as a learning tool or of any learning content is determined. The learning goals and learning activities as well as their sequencing are not fixed in informal learning processes’ (Klamma, 2013).

Different to learning that takes place in institutional settings, CoPs deepen their knowledge and expertise by interacting on an ongoing basis. Learning goals are short-term and more dynamic than in learning institutions, where goals are fixed in the curricula. As there is no prescribed way to learn, they by nature are informal, autonomous and self-organizing (Sanchez-Cardona et al, 2012). Moreover, learning analytics, in many ways, is ‘big data’ applied to education. The numbers in CoPs however ‘are often too small to draw statistical conclusions or to apply educational data mining algorithms in a standardized way’ (Klamma, 2013).

In small CoPs, community managers may be able to read all of the member-contributed content and discussion and come to know most or all of the participants. Once a CoP reaches a certain scale, however, this coverage becomes impossible. Division of labour is one approach allowing to being responsive to the emerging dynamics of community activity and relationships, but it is also helpful for the community managers to have a systematically generated, holistic picture of what is going on. Learning analytics may help provide that picture, drawing on the considerable volume of ‘data exhaust’ generated by online community activity. Beyond basic Web analytics, these data are largely an untapped resource for practitioners.

During recent years the focus of learning analytics has been widened, now also integrating cases of mutual learning, especially learning in learning communities. In order to analyse learning and knowledge building that takes place in learning communities, three different methodological approaches have been integrated: content-oriented analysis, process-oriented analysis and network analysis (Greller & Hoppe, 2017).

- Content-oriented analysis combines different methods such as semantic analysis of user-generated artefacts and computational techniques of content analysis, with a view to discover a student’s understanding of a topic or subject.





- Process-oriented analysis is designed to deliver information about temporal action patterns and sequences of self-regulated learning such as use of learning tools and, in most cases is derived from computational analysis of logfiles.
- Network analysis is a method that aims to make visible the importance of network actors: their centrality and the density of connections among each other

The EnterMode Community of Practice is defined to support the development, sharing of and critical reflection on entrepreneurship practice as well as socialising newcomers into the world of business, and to facilitate the knowledge flow between higher education and enterprises for organisation of internships and skills building. To this purpose the partnership provides a space as well as tools for learning and collaboration between higher education teachers and companies' mentors that are called to develop entrepreneurial skills to students, adopt the EnterMode model and organise students' internships.

The EnterMode model includes learning analytics tools, which aim at improving quality and efficiency of the internship by enabling mentors and organisations to adapt the internship programme to personal and organisational needs. Learning analytics in the internship model will act as a support tool for student guidance, quality assurance, activities development and improvement of efficiency.

The main data sources of learning analytics are the online game and community of practice. The serious game includes learning analytics mechanisms in order to track and direct students' learning progress, while they use the game. Achievements in the EnterMode game are used as triggers for the evaluation and control of knowledge-based processes. Learning analytics also facilitate the self-directed learning of students, since statistical data produced can be used by instructors to build hypothesis, and from those derive personalised recommendations for action. Personalised recommendations could also be based on assessments of students, e.g. based on the results of a quiz, students are recommended to return to a certain lesson in order to successfully complete it.

Collected data on activities, such as contributions to the community of practice or achievements in the EnterMode game are used for the evaluation and control of knowledge-based processes. These data intend also to help students with self-directed learning, by supporting self-reflection or personalized recommendations for action. For example, students from the same field of study can be identified from the data of problems and solutions. On the basis of the data, it is also possible to propose particularly successful problem solvers for an exchange of experience.

Data gathered that are analysed through learning analytics include:

- Resources that students use, gather, create (such as videos, images, texts, links and other learning objects, which students are expected to utilise in the course of the CoP)
- Interactions between users
- Learning topics created
- Assessment results according to the measurement of achievements completed
- Knowledge progression
- Satisfaction and engagement





Last but not least, learning analytics help to identify the most efficient tools for reflection of learning experience. A selection of those tools will be offered on the Community of Practice during the internships and user interactions for each of them will be tracked and analysed.

For the application of learning analytics in the EnterMode Community of Practice we propose a combination of methods of both process-oriented and network analysis. Using content-oriented analysis in the EnterMode internships would be rather meaningless, since students during their interactions would have to refer to a common set of learning materials, which does not apply in EnterMode.

The following table shows a number of initial ideas, which serve as starting point for more in-depth investigations into the topic of CoP learning analytics. The table starts from the most prominent solution to an unbiased processing of learning analytics data: the recording of low level activities, e.g. interactions of students or learning tools (learning objects). It continues with the more complex idea of measuring reputation and strategic positions of community members and it ends up with the analysis of the knowledge flow between heterogeneous types of practitioners. It goes without saying that the options for learning analytics, that is the collection of personalised data and data mining, will largely depend on the consent of members. Therefore, by the time of implementation members will be asked for active consent. According to GDPR they shall have the right to opt out from learning analytics at any time.

Table 6. Data which can be collected through CoP learning Analytics

User engagement	Statuses shared	Comments on statuses and items shared by other members	Recommendations of statuses and items shared by other members
	Frequency and number of items shared	Discussions started	Frequency and number of items viewed or downloaded
Centrality of students	Connections made with other members	Frequency of exchange with affiliates	Feedback 'received' upon discussions and items shared
Clusters of central students	Mutual connections	Mutual mentions in posts	Members followed
Relevance of internship model and good practice	Results from recurring polls		
Knowledge flow between HEI and world of business	Connections established between HEI and company staff	Frequency and density of interaction between HEI and company members	HEI staff followed by company staff and vice versa





The EnterMode CoP is available from DISCUSS, a European internet platform for virtual Communities of Practice, which uses the Joomla framework. For learning analytics a range of new extensions will be developed, that are based on the Mode-View-Controller structure.

Computed results will be visualised and represented through a dashboard. Moreover, selected results inside the EnterMode CoP will be displayed with the aid of modules.



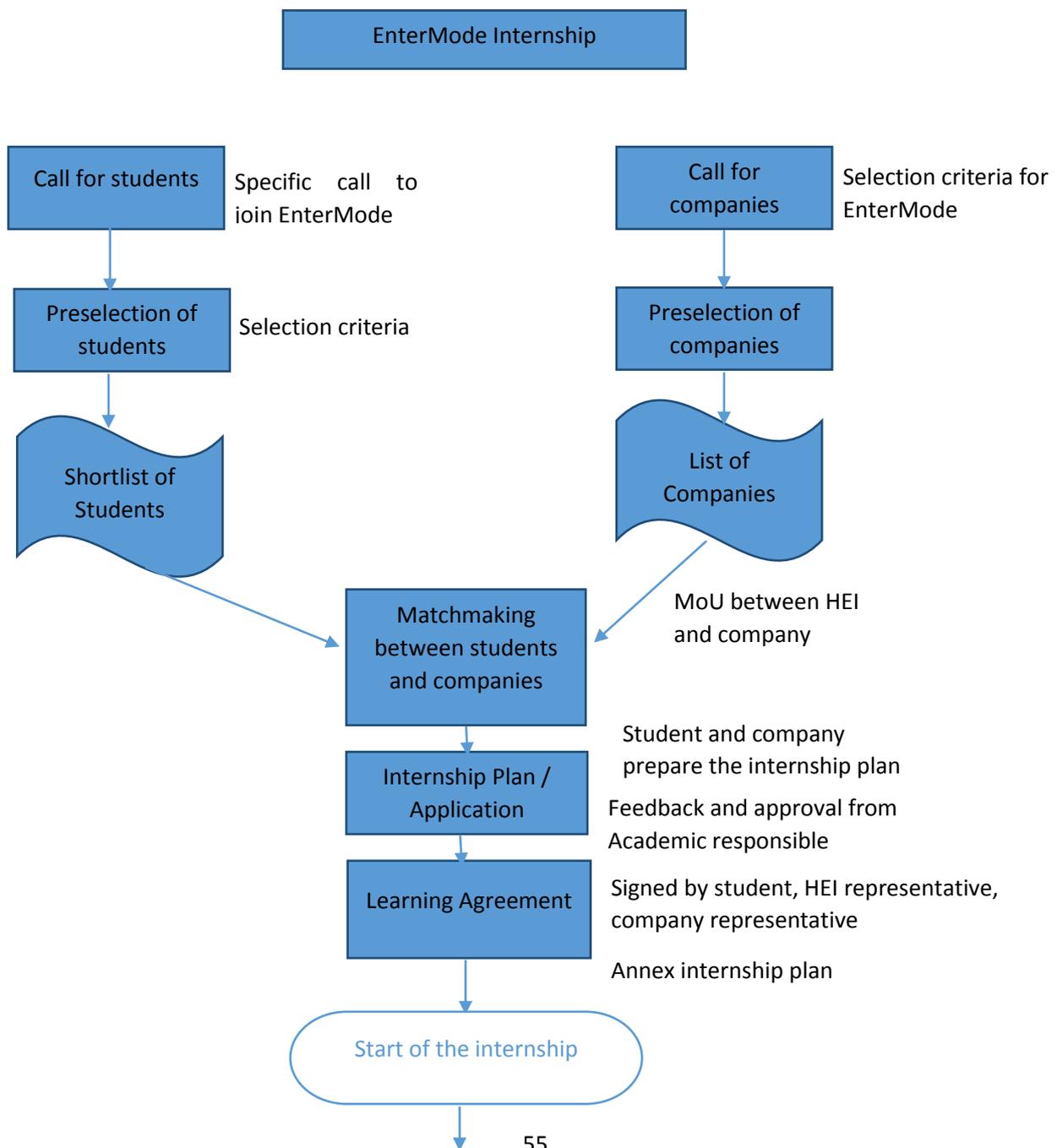


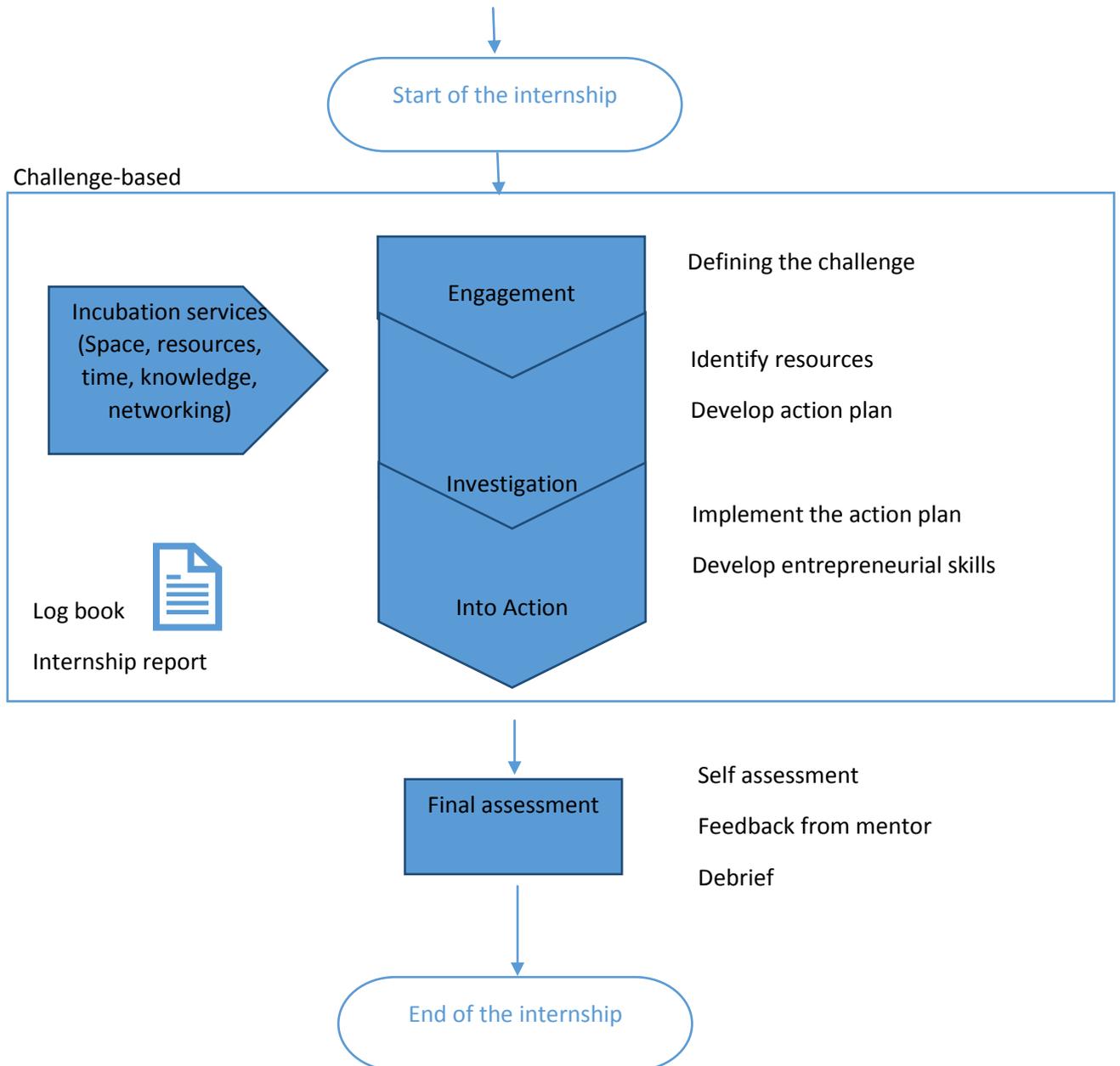
12. Implementation and sustainability of the internship model

Implementation of the EnterMode

For the implementation of the EnterMode internship model, a list of processes needs to be undertaken and realised. Those processes can be seen in the following figure:

Figure 7: EnterMode internship processes





The EnterMode internship model starts with the issuing of a call for students and a call for companies, done by the HEI administration office, following the definition of the selection criteria for students and for companies by the Academic responsible and the preparation of the necessary documentation.

After the final selection of students and companies that will be involved in the EnterMode internship, the HEI administration office, supports the matching between them, with the participation of the academic responsible.

The next step is the development of the internship plan, where the students and the company work together to define the challenge that will be implemented during the internship and the learning





outcomes, that will be achieved. The learning outcomes that will be defined, will be based on the EntreComp framework and will target a specific competence along the progression model. Furthermore, the internship design will aim at utilising the results of the EntreComp framework, by promoting specific challenges that target entrepreneurial competences identified by the framework. The implementation of challenge-based learning will facilitate the acquisition of entrepreneurial skills and competences as well as their advancement to the next progression level. The challenge is an open statement, based on a real situation of the company. It can be a problem, a new project, a new product etc. These challenges are going to be identified by the internship mentors and will also be abetted by the use of learning analytics, incubation services and a serious game. The internship plan will then be submitted for approval to the academic responsible, who together with the administration office will develop the learning agreement. The learning agreement will have to be signed by the three parties involved in the internship, the HEI representative, the company representative and the student.

During the internship, the challenge-based learning will be implemented, and the internship will be divided in three phases – Engagement, Investigation and Into Action. The processes of the challenge-based learning are described in detail in the previous chapters of the model. The companies, which will implement the entrepreneurial internship will act as “incubators” to students and will help them develop their own ideas, based on a given challenge. Higher education academic responsible and companies’ mentors will create a friendly incubation environment for students in the company, by providing the necessary resources, time and mentoring, which will respond to students’ interests and needs. Moreover, during the internship, the students will also be invited to be involved in a serious game, which will act complementary in order to promote the acquisition of entrepreneurial skills and competences. The serious game will focus on some main entrepreneurial competences and will provide incentives to students for completing the tasks given to them.

At the end of the internship the final assessment will take place by the company mentor and the HEI academic responsible, who will assess the learning outcomes achieved, the whole implementation of the internship, the theoretical and practical knowledge acquired, etc. In parallel, the student will conduct a self-assessment by using a predefined method and tool, on the entrepreneurial skills acquired. The company mentor will review the results of the self-assessment and give its feedback and recommendations to the student.

Sustainability of EnterMode internship model

As we’ve seen, the main objective of the EnterMode internship model is to promote entrepreneurial spirit of the students and to stimulate their interests in turning their ideas into action. Another pillar of the model is to stimulate Higher Education Institutions and company partnerships to validate and ensure the sustainability of the model.

As stated by the EntreComp framework, Entrepreneurship is when you act upon opportunities and ideas and transform them into value for others. The value that is created can be financial, cultural, or social (FFE-YE, 2012). Therefore, the EnterMode model will act as a bridge between the worlds of education and work, with the final beneficiaries being the students.





During the internship's duration, both HEIs and companies' mentors will work towards the incubation of entrepreneurial competences of students. During the start of each entrepreneurial internship, HEI staff in collaboration with company staff will define the specific objectives and final goals. They will work together, in order to set the main challenge that will be appointed to the students. This challenge will have to address specific entrepreneurial competences, as identified by the EntreComp framework. All the involved parties will develop a time plan, define learning goals and objectives, set the general framework of the challenge and design its branches.

The next step is to link the learning experience with the serious game. The targeted competences will be also promoted through the serious game. Subquests, which are included in the serious game will address specific competences and students, who complete certain milestones in the game, will receive resources or information needed for their progression in the main challenge proposed. Completing these subquests means that the students have moved towards the next progression stage of the specific competence and thus they will be given access to the next level.

During the whole period of the internship, companies will act as incubators for students. They will provide the space and the time needed to students, to work on their challenge. They will also provide their support and resources for the enhancement of the students' learning experience and their acquirement of entrepreneurial skills and competences. These resources will help them to complete the main challenge given. Company trainers will act as mentors to the students and they will guide them through the whole experience, thus ensuring the success of the model. Learning analytics and community of practice will act as a facilitators to the whole process and will empower mentors with valuable tools that will lead to the success of the internship objectives.

The use of work-based learning for the development of transversal skills is among the new big trends in the area of apprenticeship, as clearly stated in the recent Symposium on Apprenticeship, organised by OECD and Cedefop⁵. As we are moving to a world, where new skills are required, the development of entrepreneurial competences is crucial for students. The EnterMode internship model that we propose is an effective approach that can be easily integrated in current internship schemes, as it does not require significant investments in terms of costs. Nevertheless, it does require investments in capacity building of academic staff, in-company mentors and in the creation of a Community of Practice, between all involved persons.

The prerequisites for the adaptation, success and sustainability of the model are:

At an organisational level

- Motivation of the HEI to adapt such a programme and to offer entrepreneurial learning for students as an extra option to an established internship programme.
- Creation of a network of companies that agree to join the EnterMode and offer quality internship places to HEI students.

⁵ 2019 joint Cedefop and OECD symposium: The next steps for apprenticeship, Paris 7/10/2019, retrieved at <https://www.cedefop.europa.eu/en/events-and-projects/events/2019-joint-edefop-and-oecd-symposium-next-steps-apprenticeship-0>





- Selection of the companies that will join the scheme. The main criterion is their commitment to provide incubation to students, e.g. mentoring, support, networking and resources needed for the achievement of their project.
- Capacity building of academic staff and in-company mentors involved, through the Community of Practice and through ad-hoc seminars and webinars.

At personal level

- Motivation and active involvement of all involved persons, i.e. academic staff, in-company mentors and students.
- Selection of the students, following their own motivation to join the scheme.
- Continuous collaboration between the academic responsible, the in-company mentor and the student.
- Assessment of students' achievement and continuous improvement of EnterMode.

The EnterMode partners, through the CoP, are willing to provide guidance and support to HEIs that want to apply the EnterMode internship model in their institutes. The expansion of the CoP with more HEIs and companies will allow the creation of a multinode network that can add value to all parties. HEIs will benefit from a large network and the participation of companies, not only in their region, but also abroad. Companies will benefit from collaborating with different HEIs around Europe, attracting students that can bring value to their operations and daily activities.

Complementarily and in order to ensure the sustainability of the model, partners will highlight good practices, which will derive from the implementation of the EnterMode internships. Other means, which can be used to ensure the circulation of the project results will be videos, social media posts, news releases, articles and information materials, which will be distributed to companies and other HEIs. Moreover, HEIs will utilise their alumni network, to inform future students about the benefits of the EnterMode internship practice. By involving more companies and students in internship programmes with the aim of enhancing students' entrepreneurial skills, the internship culture of HEIs will change and even more institutions will adopt the EnterMode model.

Our main aim is to implement the EnterMode model as a template for planning all future internships in the Universities involved in the project. Through its dissemination, we envisage the distribution of the model and the extension of its use by other Higher Education Institutions in Europe, which also aim at evolving their internship programmes. We believe that since students, who are the final beneficiaries of the model, will acquire entrepreneurial skills and aptitudes, an impact will be generated on their lives and future carriers, and that ultimately they are going to be the ones who will ensure the sustainability of the model.





References

Bacigalupo, M., Kampylis, P., Punie, Y., Van den Brande, G. (2016). *EntreComp: The Entrepreneurship Competence Framework*. Luxembourg: Publication Office of the European Union; EUR 27939 EN; doi:10.2791/593884

Biggs, J.B. (2003). *Teaching for quality learning at university* (second edition). Buckingham: Open University Press/Society for Research into Higher Education.

Calloway, D., & Beckstead, S.M. (1995). Reconceptualising internships in management education. *Journal on Management Education*, 19, 326- 341.

Calvo M., Alonso-Fernández C., Freire M., Martínez-Ortiz I., Fernández-Manjón B. (2018). *Making understandable Game Learning Analytics for teachers*, Zenodo 1250767, DOI: 10.5281.

Cedefop (2012). Curriculum reform in Europe: the impact of learning outcomes. Luxembourg: Publications Office. *Cedefop research paper*; No 29. <http://www.cedefop.europa.eu/en/publications-and-resources/publications/5529>

Cedefop (2017). *Defining, writing and applying learning outcomes: a European handbook*. Luxembourg: Publications Office.

Council of the European Union (2009). Council conclusions of 12 May 2009 on a strategic framework for European cooperation in education and training ('ET 2020'). *Official Journal of the European Union*, C 119/2.

Deterding, S., Khaled, R., Nache, L.E., and Dixon, D. (2011). *Gamification: Toward a Definition*. DOI: 10.1145/1979742.1979575

European Commission (2011). Using learning outcomes: European qualifications framework series: Note 4. Luxembourg: Publications Office. http://www.cedefop.europa.eu/files/Using_learning_outcomes.pdf

European Commission (2015). *Employment and Social Developments in Europe 2015*. Luxembourg: Publications Office of the European Union

European Parliament; Council of the EU (2008). Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European qualifications framework for lifelong learning. *Official Journal of the European Union*, C 111, 6 May 2008, pp. 1-7.

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:111:0001:0007:EN:PDF>

FFE-YE. (2012). Impact of Entrepreneurship Education in Denmark - 2011. In L. Vestergaard, K. Moberg & C. Jørgensen (Eds.). *Odense: The Danish Foundation for Entrepreneurship - Young Enterprise*.

Fuller, R., & Schoenberger, R. (1991). The gender salary gap: Do academic achievement, internship experience and college major make a difference? *Social Science Quarterly*, 72(4): 715–726.





Greller W., Hoppe U. (2017). *Learning Analytics: Implications for Higher Education*. In: Zeitschrift für Hochschulentwicklung, Jahrgang 12 Nr. 2, 2017.

Johnson, L., Adams Becker, S., Cummins, M., Estrada, V., Freeman, A., and Hall, C. (2016). *NMC Horizon Report: 2016 Higher Education Edition*. Austin, Texas: The New Media Consortium.

Klamma R. (2013) Community Learning Analytics – Challenges and Opportunities. In: Wang JF., Lau R. (eds) *Advances in Web-Based Learning – ICWL 2013. ICWL 2013. Lecture Notes in Computer Science*, vol 8167. Springer, Berlin, Heidelberg. Doi: 10.1007/978-3-642-41175-5_29.

Lang Ch., Siemens G., Wise A., Gasevic D. (2017). *Handbook of Learning Analytics. Society for Learning Analytics Research 2017*. DOI: 10.18608/hla17.

Matthews, C., & Zimmerman, B. B. (1999). Integrating service learning and technical communication: Benefits and challenges. *Technical Communication Quarterly*, 8, 383– 404.

Narayanan, V. K., & Olk, P. M. (2010). Determinants of Internship Effectiveness: An Exploratory Model. *Academy of Management Learning & Education*, 9 (1), 61-80.

Nichols, M., Cator, K., and Torres, M. (2016) *Challenge Based Learner User Guide*. Redwood City, CA: Digital Promise.

Preisinger-Kleine, R. (2013) An Analytical Quality Framework for Learning Cities and Regions, *International Review of Education*, 59, 521–538.

Renganathan, S., Abdul Karim, Z.A., & Chong, S. L. (2012). Students' perception of industrial internship programme. *Education + Training*, 54 (2/3), 180-191.

Rothman, M. (2003). Internships: Most and least favored aspects among a business school sample. *Psychological Reports*, 93, 921–924.

Rychen, D. S. & Salganik, L. H. (2000). *Definition and Selection of Key Competencies: Theoretical and Conceptual Foundations*. INES GENERAL ASSEMBLY 2000. Retrieved from <http://www.deseco.admin.ch/bfs/deseco/en/index/02.parsys.69356.downloadList.26477.DownloadFile.tmp/2000.desecocontrib.inesg.a.pdf>

Sanchez-Cardona I., Sanchez-Lugo J., Velez-Gonzalez J. (2012). Exploring the potential of communities of practice for learning and collaboration in a higher education context. In: *Procedia - Social and Behavioral Sciences* 46 (2012) 1820 – 1825.

University of Ioannina (2019). *Background Study: Entrepreneurial education in HE in partner's countries, entrepreneurial skills required by HE students, framework for internships*. Retrieved from <http://entermode.eu/outputs/>

Wenger E. (2010) Communities of Practice and Social Learning Systems: the Career of a Concept. In: Blackmore C. (eds) *Social Learning Systems and Communities of Practice*. Springer, London





Wenger, E., McDermott, R. and Snyder, W. (2002). *Cultivating Communities of Practice: A Guide to Managing Knowledge*. Harvard Business School Press.

Wenger-Trayner, E. and Wenger-Trayner, B. (2015). *Introduction to communities of practice: A brief overview of the concept and its uses*. Grass Valley, CA: Wenger-Trayner





Glossary

Term	Description
Challenge -based learning:	A collaborative framework for learning while solving real-world challenges and problems.
Community of practice	A group of people who share the same craft or profession, and learn how to do it better as they interact regularly
Competence	A set of demonstrable knowledge, skills and attitudes that enable, and improve the efficiency of, performance of a job.
Career office	Career offices or career services, popular at universities, are services that help individuals make informed career choices. They may also maintain collections of reference books periodicals, newspapers, and employment newsletters and run services on occupational exploration, emerging occupations, and salaries, undergraduate and graduate schools, resume writing, interviewing, and more.
Distributed social learning	A theory of learning process and social behavior which proposes that new behaviours can be acquired by observing and imitating others. Being distributed, it does not need face-to-face interactions; rather it makes distributed resources over a network.
GDPR:	General Data Protection Regulation (GDPR) is a regulation in EU law on data protection and privacy for all individual citizens of the European Union (EU) and the European Economic Area (EEA).
Hands-on learning	A hands-on approach to learning, meaning students must interact with their environment in order to adapt and learn. Known also as "Learning by doing".
EntreComp	The European Entrepreneurship Competence Framework (EntreComp) defining entrepreneurship as a framework. EntreComp is a common reference framework that identifies 15 competences in three key areas that describe what it means to be entrepreneurial.
Entrepreneurial mind-set	A state of mind, a way of thinking which orientates actions towards entrepreneurial activities and outcome
Entrepreneurial skills	A range of technical, management and personal skills that are needed for a successful entrepreneurial activity.
Experiential learning	The process of learning through experience, and is more specifically defined as "learning through reflection on doing". Hands-on learning can be a form of experiential learning, but does not necessarily involve students





	reflecting on their product.
Gamification	Gamification is the use of game design elements in non-game contexts.
Higher Education Institute	Higher Education Institute (HEI) is a term used in Europe to designate organisations providing higher, postsecondary, tertiary, and/or third-level education.
Incubation	A combination of business development processes, infrastructure and people, designed to nurture and grow new and small businesses by supporting them through the early stages of development.
Intern	A student who works in order to gain work experience or satisfy requirements for a qualification.
International Relations Office	University services responsible for developing and coordinating the international activities of the staff and students. This involves providing support and feedback to the University management on staff and student mobility.
Internship	A period of work experience offered by an organisation to a young worker for a limited period.
Internship office	University services responsible for developing, managing and implementing internship programs for their students.
Learning analytics	The measurement, collection, analysis and reporting of data about students and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs.
Mentor	A more experienced or more knowledgeable person that helps to guide a less experienced or less knowledgeable person (mentee). A mentor may share with a mentee information about his or her own career path, as well as provide guidance, motivation, emotional support, and role modeling. A mentor may help with exploring careers, setting goals, developing contacts, and identifying resources.
Mentoring	A system of semi-structured guidance whereby one person shares his/her knowledge, skills and experience to assist others to progress in their own lives and careers
Organisational learning	The process of creating, retaining, and transferring knowledge within an organisation.
Sending organisation	The educational institution, HEI, responsible for sending the student to the receiving/host organisation (company) to implement an internship.





Serious game	The serious game combines gamification and technology in a learning context. It is a game designed for a primary purpose other than pure entertainment. The "serious" adjective is generally prepended to refer to video games used by industries like education, scientific exploration, health care, emergency management, city planning, engineering, and politics. In the context of this model, it refers to entrepreneurial competences.
Receiving organisation	The organisation, company, responsible to host a student that will implement an internship.

