



ENTREPRENEURSHIP PACKAGE

INNOVATION ENHANCEMENT (INTRAPRENEURSHIP) APPROACH

Prepared by the WEXHE project consortium, led by the University of Ljubljana as part of WP4 of the WEXHE project

Principal author: Prof. dr. Ivan Svetlik (University of Ljubljana) with contributions of dr. Tomaž Deželan (University of Ljubljana), André Perusso (MUAS), Anna Silvius, Ingrid van der Meer and Prof. dr. Robert Wagenaar (University of Groningen)

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SUMMARY

This Intrapreneurship package deals with setting up intrapreneurial training activities (project learning) aimed at innovation enhancement. Intrapreneurship is understood here as activities focused on innovation of work processes in an existing organisation. Initially the aim is not to establish new businesses but to improve and enrich existing products, services, technological and organisational processes. This Intrapreneurship/ Innovation Enhancement Package is composed of two main parts: the learning and training arrangements and the organisational arrangements. Learning and training arrangements focus on goals and objectives, key competences and learning outcomes, forms and methods of learning and teaching and assessment of students. This Intrapreneurship Package is a response to a plea of the EU Commission addressed to universities to be more entrepreneurial in terms of development of students' entrepreneurial competences. The WEXHE project cases reveal that the focus of entrepreneurial competences development courses and projects is on the development of transversal/ generic competences. These competences combined with those from other relevant research are:

- Ability to communicate and negotiate
- Ability to search opportunities, value ideas and take initiative
- Capacity to generate new ideas (creativity and innovation)
- Capacity to think critically, ethically and sustainable – (self- reflection and self-awareness)
- Ability to design and manage projects and finances
- Ability to motivate people and move towards common goals (leadership)
- Ability to make a business planning and modelling
- Ability to make reasoned decisions (decision-making), to plan and manage time (organisational skills) and to cope with uncertainty, ambiguity and risk
- Ability to work in a team (teamwork)
- Ability to learn and stay up to date with learning

For each of the above-mentioned competences, methods of development are suggested through acquisition of additional knowledge, skills, autonomy and responsibilities in the classroom as well as in a project work setting. Assessment of students and certification of their study and project results is also included in this section.

Organisational arrangements include the steps necessary to effectively implement intrapreneurial training activities. Making arrangements starts with planning the intrapreneurial dimension in the curriculum, followed by organising course work, attracting organisations that offer challenging project issues, formation of intrapreneurship students' teams and assigning mentors and supervisors. During an intrapreneurial training activity,

student teams design a project, elaborate their (innovative) idea and present the results, after which the supervisor assesses the team results and the contribution of the individual students. Finally, the intrapreneurial training activity is evaluated and a final report is made. Universities can make these steps in cooperation with the organisations that offer challenging issues for students' intrapreneurship teams. Special attention is paid to the specification of the main roles, such as mentors, supervisors and coordinators, including tasks and responsibilities necessary for successful implementation of an intrapreneurial training activity. The package ends with suggestions for the financial, quality assurance, evaluation and accreditation arrangements.

The package is prepared as reference material, which can help universities to implement intrapreneurial competences and skills development in their curricula in a way that fits best to their conditions. Therefore, it also contains some appendices that serve as examples of practical solutions taken from various WEXHE (and other) cases and from literature.

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INTRODUCTION

Looking at the three modes of work-based learning Work Placements, Traineeships and Entrepreneurship (Hereafter: WBL), entrepreneurship might be the one with the most variations in design. WEXHE research shows that it is very difficult to be taught and trained for entrepreneurship without involvement in concrete organisational and business situations. Such an involvement requires some entrepreneurial skills from the student, which we believe can be identified and developed further. Some universities, for instance, highlight formally 'bad students' who turned out as successful entrepreneurs. This indicates that an appropriate approach to learn entrepreneurship is often missing. In addition, the success of entrepreneurial activities depends on the cultural/ national context in which individuals are brought up and in which they set up their 'entrepreneurial projects'.

Struck by observations such as a lack of entrepreneurial spirit in Europe and the fact that young generations prefer security over risk-taking (one of the core characteristics of entrepreneurs) the European Commission has sent several appeals to societal institutions calling for their engagement in the promotion and development of entrepreneurship. In 'The Entrepreneurship 2020 Action Plan' of the European Commission three areas of immediate intervention are put forward: i) entrepreneurial education and training, ii) removing administrative barriers and iii) reigniting the culture of entrepreneurship. Universities, too, have been urged to become more entrepreneurial (EC, 2019). If new entrepreneurs have to stand up, the role of universities is to identify students with entrepreneurial dispositions, to motivate them to engage in entrepreneurial activities and to help develop their entrepreneurial competences. As the research of Welsh et al (2015) indicates, the longer students are involved in entrepreneurship education the more positive their attitude is towards entrepreneurship, which results in a bigger number of those who decide to pursue an entrepreneurial career and persist in it. In addition, the shift towards knowledge-based production requires an increase in knowledge and decrease of capital investments. Subsequently, this situation would provide universities with the opportunity to create new jobs directly through the establishment of new enterprises by students and graduates. Thus, the support and development of entrepreneurship has become a part of the mission of many universities to serve society.

The WEXHE cases reveal a great variety of activities that universities carry out in order to develop entrepreneurial activities. In general, these activities can be placed into three categories:

- Entrepreneurship promotion
- Business creation, and
- Intrapreneurship/ innovation enhancement.

This package deals with setting up intrapreneurial training activities aimed at innovation enhancement. Intrapreneurship is understood here as activities focused on innovation of work processes in an existing organisation. Initially the aim is not to establish new businesses but to improve and enrich existing products, services, technological and organisational processes. It is based on the belief that individuals do not need to establish their own enterprises in order to be entrepreneurial and innovative. On the contrary, employers expect employees to acquire entrepreneurial and innovation enhancing competences during their study period and to demonstrate these during their work. Intrapreneurs fulfil the role of entrepreneurs, leaders, and innovators within a group or organisation (EC, 2019a). It is a challenge for universities to identify and develop the entrepreneurial competences in their students. In this respect universities usually focus on the development and delivery of appropriate courses which are offered to students, and on several active approaches to teaching, studying and training including project work.

The Purpose of the Intrapreneurship/ Innovation Enhancement Package

This Intrapreneurship/ Innovation Enhancement Package is based on information from actual entrepreneurship cases which are practiced in various work environments in seven EU countries (Cyprus, Germany, Netherlands, Poland, Slovenia, Spain and United Kingdom), and on information from other relevant projects and literature. Its purpose is to systemize this information in a user-friendly form and to make it available to all institutions making efforts to raise social responsibility of universities in terms of enabling and empowering their students and graduates to innovate and create new business opportunities. Public and private investments in one's education are high. Therefore, adequate returns on investments, such as the quality of labour, individual (self) employment and career prospects and personal satisfaction are reasonably expected.

This package is not intended as a set of rules to be strictly followed. Rather, it presents a variety of approaches, practices and solutions applicable in the surroundings of various organisations and traditions. It should be taken as a reference and a source of inspiration for those experts who are in charge of innovation and business enhancement or who plan to deal with it. It is not a recipe but a menu out of which one can take solutions that fit best to the local conditions.

The package is prepared primarily for universities and (their) supportive institutions, which strive to:

- Include intrapreneurial activities into educational training processes
- Include and simulate innovative challenges that require risk taking in the learning/ studying processes
- Increase the quality and relevance of degree programmes by including intrapreneurial knowledge transfer, skills and competences.

It is expected that students are already equipped with up-to-date competences in their professional fields of study. However, the promotion of intrapreneurial culture and development of students' intrapreneurial competences requires some additional courses and/ or special pedagogical approaches and methods. Students should be encouraged to call upon their risk taking and innovative spirit and to face challenges in which they need to find solutions for technical, organisational and social problems. They should be empowered to implement technical, organisational and business ideas. By implementing intrapreneurial activities, students can develop some intrapreneurial competences, mature in risk taking, apply some theoretical knowledge in practice and consequently increase their employability. In this respect intrapreneurship and innovation enhancement should be considered as an ingredient of every higher education programme and a first step towards entrepreneurship.

LEARNING AND TRAINING ARRANGEMENTS: CONTENT OF THE MODULE

A learning module represents a kind of general curriculum that can serve as a basis for the elaboration of concrete programmes. These programmes can be adjusted to groups of students enrolled in the same study programme. Generally, the work-based learning (WBL) programme consists of several components (Schmidt and Gibbs, 2009):

- a reflective learning review that articulates and documents experiences, learning outcomes achieved and competences held;
- a learning interview to ensure the suitability of learners to the programme;
- flexible recognition of prior learning;
- clearly defined learning outcomes for study modules and programmes;
- a learning agreement between stakeholders that establishes the learner's programme of study;
- support from the organisation/company;
- assessment including recognition of experiential learning gained in the workplace, recognition of ability to apply theoretical learning and demonstration of related competences in the workplace, mapping of experiential learning onto a template of standard, and assessing modules/projects undertaken;
- officially recognised award of learning outcomes.

The following paragraphs contain the characteristics of a learning module aiming at the development of intrapreneurial competences. The curriculum components will be addressed first followed by organisational arrangements.

Development of intrapreneurial competences should ideally be included in all courses/subjects, project work and similar forms of education and training of a degree programme. However, some specific courses and study methods more relevant for intrapreneurial competence development, and in some cases combined and made into specific study module, can also be offered by universities. As stated in the 'Entrepreneurship Education' publication of the European Commission (EC, 2019a) an entrepreneurial mind-set and entrepreneurial skills can only be effectively developed through hands-on, real life experiences and project work. It can be taught across all subjects, as a separate subject or combined with others. The intrapreneurial dimension should be determined already in the design process of study programmes as a part of study courses, as specific courses, as a study method or as a module. However, it will be arranged, a study programme should determine what the main goals and objectives of an intrapreneurial activity are, which competences students develop while participating in intrapreneurship activities, which learning and training methods are implemented, how learning outcomes are assessed, how much time is devoted to

intrapreneurship, etc. These arrangements may vary from one study programme to the other. They depend on several factors, such as the field of study, learning outcomes to be achieved, possibilities to simulate intrapreneurial environments at the university, response of employers and other partners to collaborate in intrapreneurial development, availability of resources, tradition of intrapreneurship, etc. Course work should be similar for all enrolled students while other forms of intrapreneurial development may differ between (groups of) students.

Goals and objectives

The main goal of offering intrapreneurial activities at universities is to help students acquire adequate intrapreneurial competences. Other frequently mentioned motives for developing intrapreneurial competences, some of which identified also in the WEXHE project are:

- on the side of students: to develop understanding of theory in real work environment, to increase employability and to develop realistic expectations about work environment (Knouse and Fontenot, 2008);
- on the side of universities: to promote and develop intrapreneurship and social responsibility among students, to bridge the competency gap and increase employability of students, to contribute to students' personal development, to increase the image of a university addressing local and regional issues.

Concrete objectives of intrapreneurial activities that stimulate the development of intrapreneurial competences and skills development are:

- to insert intrapreneurial components into study programmes as an integral or elective part
- to identify competences needed for an intrapreneurial activity
- to identify courses/ subjects that provide for the development of intrapreneurial activities
- to identify projects and methods of intrapreneurial competences' development
- to attract organisations eager to offer challenging issues to students for their intrapreneurial competences development
- to provide mentors with intrapreneurship experiences
- to develop students' intrapreneurial competences and skills, and
- to assess acquired competences and award credits and certificates to students.

Key competences and expected learning outcomes

In the WEXHE study we understand competences as a general term embracing knowledge, skills and autonomy/ responsibility (Wagenaar, 2019, p.391-425) where skills are developed on the basis of relevant knowledge and autonomy/ responsibilities on the basis of both knowledge and skills. In other words, only a proper combination of knowledge, skills and autonomy/ responsibilities that a student acquires make him/ her competent.

During their study, students acquire competences specifically linked to their study programme. If a programme includes intrapreneurial components, a lot of knowledge and competences can be delivered to students in the class. However, some can be better developed in a real work environment or in close connection with the world of work. Work placement can also be practiced as an intrapreneurial activity. It depends on the disciplinary area and on the competences to be developed, when and where in the study programme these competences are developed. In some disciplinary areas, such as economics and business, a lot of intrapreneurial courses, exercises and projects are included in the curricula. Programme directors invite experienced practitioners from the world of work as (guest) lecturers that will provide students with real business and organisational cases and/ or give them inspirational lectures that will help the students during the intrapreneurial activity. In the area of engineering, on the other hand, the same approach has not been widely used due to a lack of experience and a focus on technical issues. In this case course work should be offered to students in combination with project work on real technological and organisational issues and with placement in real work environment. Where and how intra/entrepreneurial competences and skills will be developed should be explicitly stated in a study programme.

In a study on entrepreneurship competences (Bocigalupo et al, 2016) the authors identified three areas of which each contains five entrepreneurship competences. These three areas are:

1. **Ideas and opportunities:** spotting opportunities, being creative, having vision, value ideas, being ethical and the ability to think sustainable;
2. **Resources:** self-awareness and self-efficacy, motivation and perseverance, ability to mobilise resources and people, being financially and economically literate;
3. **Action:** taking the initiative, ability to plan and manage, ability to cope with uncertainty, ambiguity and risk, ability to work with others and to learn through experience.

The cases collected in the WEXHE project indicate that training for entrepreneurship is very much focused on the development of transversal/ generic competences although they differ to some extent from competences and skills developed by work placement and traineeship. The obtained list overlaps significantly with the one presented by Bocigalupo et al (2016). The difference is rather in phrasing than in the content. Since WEXHE cases cannot be considered (sufficiently??) representative, a merged list of entrepreneurship competences is presented below. The only important WEXHE competence not included in the Bocigalupo et al list is 'communication and negotiation', and only 'vision', and self-efficacy' from the Bocigalupo et al. list are missing. The list includes the following ten competences:

- **Ability to communicate and negotiate** (able to read, understand, write and interpret various texts and reports; orally communicate and present clearly with adjustment to individual and group situations; understand and manage body language; communicate in different languages; understand communication in different cultural

contexts; manage various styles of communication; eager to communicate with others; have sense of empathy; negotiate with co-workers, partners and customers effectively; recognise partners' messages; manage convincing argumentation; being self-confident in communication; search compromises; etc.)

- **Ability to search opportunities, value ideas and take initiative** (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; 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; initiate action when needed; initiate processes that create value; take up challenges, act and work independently to achieve goals; stick to intentions and carry out planned tasks; etc.)
- **Capacity to generate new ideas (creativity and innovation)** (able to originate new ideas to create value, to think out of the box, to seek improvements of existing processes and to focus on details; ready to share one's thoughts and elaborate proposals; open minded; look at challenges as opportunities; etc.)
- **Capacity to think critically, ethically and sustainable – (self) reflection and self-awareness** (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 critically examine the course of action chosen; act responsibly; reflect on own needs, aspirations and wants in the short, medium and long term; etc.)
- **Ability to design and manage projects and finances** (able to manage various fields, especially projects and finances; estimate the cost of turning an idea into a value creating activity; able to identify, analyse and solve problems; able to deal with several variables simultaneously and effectively; able to find material, non-material and digital resources to turn ideas into action and take appropriate decisions; make the most of limited resources; ready to take decisions and responsibility for the consequences; etc.)
- **Ability to mobilize and motivate oneself and others to move towards common goals (leadership)** (inspire and enthuse relevant stakeholders; get the support needed to achieve valuable outcomes; able to coordinate complex work, to set out common goals and to assign tasks to co-workers properly; engaged for goals' attainment, able to spread enthusiasm among co-workers, able to recognise others' abilities and skills and to motivate them for their utilisation; ready to assist co-workers, to fairly assess their contributions and to give clear positive and negative feedback – recognition and critique; able to transfer and ready to share knowledge and skills with co-workers, empathy and assertiveness; being accepted by co-workers; be determined to turn ideas into action and satisfy own and others' need to achieve; be prepared to be patient and keep trying to achieve long-term individual or group aims; be resilient under pressure, adversity, and temporary failure; etc.)

- **Ability to make a business planning and modelling** (set long-, medium- and short-term goals; define priorities and action plans; able to select appropriate business idea and elaborate it in terms of concrete products or services; able to apply knowledge from the fields of finances, marketing, human resources and other relevant technical fields; able to design production process, able to realistically put business idea into a time frame, able to evaluate business idea from the perspective of technical feasibility and market analysis; able to adapt to unforeseen changes; etc.)
- **Ability to make reasoned decisions, to plan and manage (organisational skills), to cope with uncertainty, ambiguity and risk** (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 risk and failing; handle fast-moving situations promptly and flexibly; etc.)
- **Ability to work with others (teamwork)** (work together and co-operate with others to develop ideas and turn them into action; network; understand one's and others roles in teams; accept co-workers having different personal characteristics; seek team synergy; able to defend or withdraw own attitudes; ready to listen and able to understand others' arguments; adjust to the changing interpersonal situations and to different personalities; ready to contribute to the common goals and success; ready to share information, efforts and results; make others interested for own ideas; solve conflicts and face up to competition positively when necessary; etc.)
- **Ability to learn and stay up to date with learning** (use any initiative for value creation as a learning opportunity; learn with others, including peers and mentors; reflect and learn from both own and others success and failure; etc.).

A more precise analysis of competences shows that every transversal competence should be put in the organisational and professional context. Such analysis reveals that the same competence may have different **contents** and could be expected at different **levels** of mastery in different contexts. For instance, initiation of innovative ideas in a production system requires detailed insight into the characteristics of a certain product and into the sequence of work operations, while elaboration of a proposal for a new performance appraisal system requires attentive observation of workers' and leaders' attitudes and checking of their opinions. For an engineer, required communication skills are excellent/ precise reading and drawing skills, and excellent presentation skills including figures, formulas and graphs. For a cultural events manager however, excellent verbal skills are required, understanding implicit meanings of messages and empathy. This does not mean that engineers do not need verbal skills and that cultural event managers do not need to know how to deal with figures and graphs. They both need to develop these components of communication competence at different levels, one at a more basic/ lower and the other at a more advanced/ higher level.

A grading of competences is already embedded in the tables 2 - 4 where knowledge needed for certain competence represents the basic level, skills added to this knowledge an

intermediary level and autonomy/ responsibility represent the highest level of competence/ mastery. Referring to Lundvall and Johnson (1994) one could say that knowledge gives an answer to WHAT, skills to HOW and autonomy/ responsibility to WHY. Looking at competences' grading from a behavioural perspective one could apply additional grading for knowledge, skills and autonomy/ responsibility separately as follows:

- Basic level: expected standards are met on the basis of written or oral instructions
- Average level: expected standards are met independently with no particular instruction
- Advanced level: expected standards are surpassed even in non-standard situations
- Highly advanced (expert) level: expected standards are surpassed including the ability to transfer knowledge and skills on to the co-workers.

An example of how both gradings of competences can be combined is presented in table 1.

The more one achieves higher levels of knowledge, skills and autonomy/ responsibility the higher his/ her mastery in a certain competence. One's competency is a sum of all different competences. However, for a successful performance of a certain profession as well as for the design of a study programme including its entrepreneurship component a proper selection of competences must be made and all competences do not need to be developed to the highest level.

The number of competences and the level of competence proficiency/ mastery to be achieved represent the basis for the allocation of credit points in a certain course or programme. This usually implies also the expected workload of students expressed in the number of hours needed to acquire certain competence.

A competency model provides basic information for preparing an intrapreneurship component of a study programme. The other information comes from the study programme that students are involved in. The core of the intrapreneurship component should focus on the achievement of learning outcomes in line with the formula:

Competency/ skill gap = Required KSAR for intrapreneurship – Acquired KSAR by the student where

K stands for knowledge, S for skills and AR for autonomy/ responsibilities. The result of such an analysis on the study programme/ module in comparison to the expected intrapreneurial environment shows for each competence one of the options, such as:

- Training is not needed
- Some training is needed
- Substantial training is needed
- Competence is not relevant.

Ideally, one would adjust intrapreneurship component to an individual student where his/her acquired knowledge, skills and autonomy/ responsibility as well as possibilities to further develop them in the intrapreneurship training are taken into account.

For the preparation of a study programme with intrapreneurial elements and for monitoring and evaluating its results, the learning outcomes to be achieved are presented in a generalized form. The outcomes are described with reference to the Tuning CALOHEE project (Wagenaar, 2019, p. 391-425) and to the EntreComp study (Bocigalupo et al, 2016) separately for the graduates of the 6th (bachelor) and 7th (master) level of education. Each competence is described in terms of expected knowledge, skills, autonomy and responsibility (see tables 2 and 3).

Table 1: A two-dimensional grading of competences – the case of ‘teamwork and networking competence’

BEHAVIOURAL D. / CONTENT D.	KNOWLEDGE	SKILLS	AUTONOMY/ RESPONSIBILITY
HIGHLY ADVANCED	Demonstrate highly advanced knowledge and understanding of methods of team composition, networks and attitude to work collaboratively including ability to teach about teamwork and networks.	Function independently and effectively in national and international working/ project teams and networks able to instruct new teams and networks formation.	Identify proactively appropriate methods and strategies of teams’ and networks’ functioning and management. Collaborate constructively, take additional responsibility and enjoys recognition from mates.
ADVANCED	Demonstrate advanced knowledge and understanding of methods of team composition, networks and attitude to work collaboratively.	Function independently and effectively in national and international working/ project teams and networks taking initiative and being a pattern for mates.	Identify appropriate methods and strategies of teams’ and networks’ functioning and management. Collaborate constructively and voluntarily take additional responsibilities.
AVERAGE	Demonstrate good knowledge and understanding of methods of team composition, networks and attitude to work collaboratively.	Function independently and effectively in national and international working/ project teams and networks.	Identify appropriate methods and strategies of teams’ and networks’ functioning and management. Collaborate constructively.
BASIC	Demonstrate basic knowledge and understanding of methods of team composition, networks and attitude to work collaboratively.	Function in national and international working/ project teams and networks on the basis of instruction.	Collaborate constructively.

Table 2: TRANSVERSAL/ GENERIC COMPETENCES AND GENERALIZED LEARNING OUTCOMES DESCRIPTION FOR INTRAPRENEURSHIP – LEVEL 6

QF EHEA descriptors	SQF dimensions Competences	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.
I - Demonstrate knowledge and understanding				
II - Apply knowledge and understanding	<p>- Ability to design and manage projects and finances</p> <p>- Ability to make a business forecasting, planning and modelling</p>	<p>-Establish methods of analysis/ solution of problems from the professional and business fields by linking concepts with basic strategies, procedures and tools. Demonstrate awareness of the key aspects of professional, ethical and social responsibilities linked to management of activities in the professional and business areas, decision making and judgement formulation.</p> <p>-Demonstrate knowledge of business planning and modelling: methods, structure, processes and environment.</p>	<p>-Analyse a complex problem, recognise its structure, devise, execute and validate a plan for its solution in the professional and business fields. Manage work context in the business area. Find funding options and manage a budget for value creating activity.</p> <p>-Find a viable business idea and elaborate it from technical, financial, commercial, marketing and human resources perspectives in order to pass a feasibility check. Create an action plan, which identifies the</p>	<p>-Identify appropriate concepts, methods of analysis/ solution of complex problems in the professional and business fields. Identify appropriate and relevant approaches to manage work contexts in the business area and reflect on professional, ethical and social responsibilities in taking decisions and formulating judgements.</p> <p>- Identify appropriate methods of business risks analysis. Reflect on consequences and responsibilities in application of business plans and models.</p>

			priorities and milestones to achieve goals.	
III - Gather and interpret relevant data	<ul style="list-style-type: none"> - Capacity to generate new ideas (creativity and innovation) -Ability to make reasoned decisions (decision-making), to plan and manage time (organisational skills), and to cope with complexity, uncertainty, ambiguity and risk -Ability to search opportunities, value ideas and take initiative -Capacity to think critically, ethically and sustainable – (self- 	<ul style="list-style-type: none"> -Demonstrate knowledge of the on-going nature of research and debate in the professional area and the business-making field. -Demonstrate knowledge of organisational principles and decision-making. -Demonstrate knowledge of evaluation and application of business ideas in practice. -Demonstrate knowledge and awareness of business ethics and 	<ul style="list-style-type: none"> - Approach issues with curiosity, creativity and critical awareness. Retrieve and handle information from a variety of sources, identifying business and innovation opportunities. Test and refine ideas that create value for others. -Take decisions and formulate judgements. Deal with several variables simultaneously, set goals and prioritise activities. Evaluate the benefits and risks of alternative options and make choices that reflect own preferences. -Recognize opportunities to address needs that have not been met. Map the environment and network to identify business ideas. Initiate value-creating activities. -Make decisions based on ethical and sustainability standards. Avoid partners who do not respect human rights, 	<ul style="list-style-type: none"> -Reflect on one’s own perspective, capabilities and performance to improve and use them in a creative way. Think in innovation and business terms, point at opportunities, gather and analyse data to estimate risks. - Identify appropriate methods of decision-making and risk minimization. Anticipate measures to ameliorate undesired consequences of decisions. Take responsibility for decisions made in unpredictable work or study contexts. -Take responsibility for own business initiative and respect the authorship of others business ideas. Identify methods for ideas valuation. Take responsibility for initiated ideas and mobilising others for them. -Reflect on ethical and social consequences and responsibilities in application of business plans and models.

	reflection and self-awareness)	responsibilities, and of sustainability concepts.	environmental, anti-corruption and similar standards.	
V - Undertake further study with high degree of autonomy	-Ability to learn and stay up-to-date with learning (learning from failure)	-Demonstrate advanced knowledge and understanding of the learning and working methods necessary to follow developments in science and technology in the professional and business field. Identify relevant competences needed for pursuing further studies and career goals.	-Engage in independent learning and follow developments in business, science and technology autonomously. Organize own study. Reflect and judge achievements and failures and learn from these.	-Identify appropriate learning methods to follow developments in science and technology in the business and professional fields. Enter new fields of study through a positive attitude. Evaluate own personal and professional competences and take responsibility for own learning.

Table 3: TRANSVERSAL/ GENERIC COMPETENCES AND GENERALIZED LEARNING OUTCOMES DESCRIPTION FOR INTRAPRENEURSHIP – LEVEL 7

QF EHEA descriptors	SQF dimensions	Highly specialised knowledge, some of which is at the forefront of knowledge	Specialised problem-solving skills required in research and/or innovation in order to develop new	Manage and transform work or study contexts that are complex,
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	Competences	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	knowledge and procedures and to integrate knowledge from different fields	unpredictable and require new strategic approaches Take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
I - Demonstrate knowledge and understanding				
II - Apply knowledge and understanding	<p>- Ability to design and manage projects and finances</p> <p>- Ability to make a business forecasting, planning and modelling</p>	<p>-Demonstrate comprehensive knowledge and understanding of the process and methods of analysis/ solution of problems from the professional and business fields by linking concepts with strategies, procedures and tools. Demonstrate critical awareness of the key aspects of professional, ethical, business and social responsibilities linked to management of work contexts, decision-making and judgement formulation in the subject area.</p> <p>-Demonstrate knowledge of complex business planning and modelling: methods, structure, processes and environment.</p>	<p>Analyse/ solve very complex, context rich and unfamiliar business problems, recognise their structure, devise, execute and validate creative plans for their solution in the professional and business fields. Manage work contexts in the business area and within broader or multidisciplinary contexts that may be unpredictable and require new strategic approaches. Make a plan for the financial sustainability of a value creating activity.</p> <p>-Find a complex business idea and elaborate it in detail from technical, financial, commercial, marketing and human resources perspectives in order to pass a feasibility check. Create an action plan, which identifies the priorities and</p>	<p>-Identify appropriate concepts, methods of analysis and creative solution of very complex problems that occur even in unfamiliar situations in the professional and business fields. Identify and justify appropriate and relevant strategic approaches and analyse professional, business, ethical and social responsibilities linked to the management of work contexts in the business area and within broader or multidisciplinary contexts, taking coherent decisions and formulating coherent judgements.</p> <p>- Identify appropriate methods of a complex business risks analysis. Reflect on consequences and responsibilities in application of business plans and models.</p>

			milestones to achieve goals in changing circumstances.	
III - Gather and interpret relevant data	<p>- Capacity to generate new ideas (creativity and innovation)</p> <p>-Ability to make reasoned decisions (decision-making), to plan and manage time (organisational skills), and to cope with complexity, uncertainty, ambiguity and risk</p> <p>-Ability to search opportunities, value ideas and take initiative</p>	<p>-Demonstrate detailed knowledge and understanding of the on-going nature of research and debate in the professional and business field contributing to innovative perspectives.</p> <p>-Demonstrate knowledge of organisational theory and decision-making models.</p> <p>-Demonstrate knowledge of business theory and evaluation theory and their application in practice.</p>	<p>- Approach issues with curiosity, creativity and critical awareness. Retrieve and handle information from a variety of sources, integrating it critically into a business plan. Formulate original interpretations and innovation proposals. Transform ideas into solutions that create value for others.</p> <p>-Take decisions and formulate judgements on complex problems. Deal with a big number of variables simultaneously. Weigh up risks and make decisions despite uncertainty and ambiguity.</p> <p>-Size and shape opportunities to respond to challenges and create value for others. Map the environment and network to identify business ideas. Take initiative to add or create value.</p>	<p>-Reflect on one's own perspective, capabilities and performance to improve and use them in a creative way. Think in business terms, point at opportunities, gather and analyse data to estimate risks. Deal with business problems in an original manner. Organize complex efforts integrating the results of diverse studies and analyses.</p> <p>- Identify appropriate methods of decision-making and risk minimization. Anticipate measures to ameliorate undesired consequences of decisions. Take responsibility for decisions made in unpredictable contexts.</p> <p>-Take responsibility for own business initiative and respect the authorship of others business ideas. Identify methods for ideas valuation. Take responsibility for initiated ideas and mobilising others for them.</p>

	- Capacity to think critically, ethically and sustainable – (self-reflection and self-awareness)	-Demonstrate knowledge and awareness of business ethics and responsibilities, and of sustainability concepts.	-Make decisions based on high ethical and sustainability standards. Refuse partners who do not respect human rights, environmental, anti-corruption and similar standards.	-Apply ethical standards in reflection on social and environmental consequences of business plans and models implementation. Take responsibility for eventual breaching of standards.
IV - Communicate information, ideas, problems and solutions	- Ability to work with others in a team (teamwork) - Ability to communicate and negotiate	-Demonstrate knowledge and understanding of methods and theories of teams' management strategies that may be composed of different disciplines and operate on different levels. -Demonstrate knowledge and understanding of social relations, principles and tools of intercultural and interdisciplinary communication, as critical understanding of the use of social media and communication technologies in the professional, business and wider social contexts including negotiation. -Demonstrate knowledge of theories and models of entrepreneurship,	-Function effectively in national and international working / project teams as a member or leader to create value. Demonstrate ability to create a team or network based on value-creativity needs. -Communicate effectively, clearly and unambiguously complex information, activities and their results to wider national and international audiences in oral and written form using various media in more than one language. Communicate activities' results and the knowledge and rationale underpinning them. Negotiate effectively with co-workers, superiors, customers and partners most sensitive issues. - Able to initiate, elaborate and implement a new complex business. Able to lead and work collaboratively in diverse teams.	-Identify and justify appropriate methods and strategies of teams' functioning and management. Collaborate constructively and share responsibility for teamwork effects. -Identify appropriate and relevant communication strategies, methods, tools and terminology for highly sensitive issues and situations. Demonstrate ability to listen and to understand different viewpoints and to discuss with diverse audiences' ideas, problems and solutions fostering transparency and responsibility. -Ready to take risks associated with complex business projects. Able to work inter-culturally and inter-professionally with lay and

	- Ability to motivate people and move towards common goals (leadership)	leadership, management and teams. Demonstrate knowledge of psychology, personality and motivation theories.	Able to supervise, persuade, involve and inspire colleagues and junior staff in value-creating activities despite complex and unpredictable situations. Able to analyse consequences of different choices and to manage high diversity, and to prevent, resolve and manage conflicts. Stay focused on own passion and keep creating value despite setbacks. Teaches others.	professional groups. Committed to build a sense of social responsibility in the choices made at personal, professional and contextual levels. Identify and chose appropriate methods and techniques to keep oneself and others motivated.
V - Undertake further study with high degree of autonomy	- Ability to learn and stay up-to-date with learning (learning from failures)	-Demonstrate advanced specialised knowledge and understanding of the learning and working methods necessary to follow developments in science and technology in the professional field. Undertake further studies in new and emerging technologies.	-Engage in independent learning and follow developments in business, science and technology autonomously. Organize own study. Improve abilities to create value by building on previous experiences and interactions with others.	- Identify and justify appropriate learning and working strategies and methods to follow developments in business and science and technology in the professional field. Enter new fields of study through a positive attitude. Evaluate own personal and professional competences and take responsibility for own learning.

The description of competences with respect to the expected learning outcomes is generalized, meaning that it suits to various professional fields to which it should be adjusted in concrete organisations. Adjustment means that in each case (organisation, programme) a list of competences which serves as a starting point for further steps should be determined. From the list of competences presented in this package one can drop some out, add additional generic competences, and add profession, organisation and job specific competences. In short, the list of competences dealt with in this package represents a core menu of generic competences from which some can be left out and others added, as appropriate to the situation. It is also advised to identify the level to achieve as illustrated in table 1.

The following step to be made is to find appropriate ways for competences development.

Forms and methods of learning/ teaching – defining learning format

“School-based learning appeals to other competencies than work-based learning does. In school-based learning, mainly verbal information has to be memorized, which can be done by: passive reception, active reproduction, and active reconstruction of knowledge. In work-based learning, memorization plays a much smaller role. Instead, gathering experiential knowledge is the main task. This can be done by: learning by doing (surrender to experience), guided learning (following instructions and assignments), and reflective learning (experimenting and making sense of experience)” (De Jong et al, 2006).

“What work-based learning seeks to develop in learners, then, is a meta-competence that transcends the application of immediate skills in order to adapt to variability in work demands... Faced with unpredictable circumstances, participants rely on reflection-in-action and incorporate activities such as on-the-spot reframing, re-evaluation of standard practices, and spontaneous testing of available knowledge to arrive at a solution to the immediate problem... Their learning arises not from prepared scenarios controlled by classroom instructors but from working through the messy, implicit, and real questions of practice... Classroom learning of this experiential nature can be preparatory for the ultimate application of the desired metacognitive critical skills in natural settings” (Raelin, 2016).

Learning and teaching of students should be organised in proper physical, social and organisational environments, which enhance competence development. Students should attend appropriate courses which are supplemented by a number of active teaching and study methods.

The main forms and methods of learning and teaching of students revealed in the WEXHE cases and relevant for intrapreneurial competences and skills development could be structured as follows:

- **Course work:** The WEXHE cases provide a long list of courses which aim at the development of competences and skills needed for entrepreneurship and intrapreneurship although some competences, such as creativity, communication,

teamwork and similar can be fostered at any course if proper teaching and study methods are applied. The examples of courses can be structured in the following groups:

A) General courses from the field of social sciences, such as Economic theory, Organisational theory, Communication theory, Psychology and General management.

B) Applied courses:

Examples of applied courses from the field of **economics** are:

- Economic analysis of entrepreneurial projects
- Value creation
- Economic and financial planning/ forecasting
- Financial and cash flow analysis
- Market analysis/ research
- E-commerce
- Marketing strategies

Examples of applied courses from the **organisational** field are:

- Teamwork and group work dynamics
- Decision analysis
- Problem solving
- Intellectual property
- Logistics

Examples of applied courses from the field of **communication** are:

- Communication techniques
- Giving and receiving feedback
- Negotiation
- Conflicts resolution

In the field of **psychology** applied courses can be offered, such as:

- Techniques and methods of creativity and ideas generation
- Design thinking

Examples of **applied management** courses are:

- Personal leadership
- People/ talent management
- Gamification
- Validation practices
- Feasibility and evaluation analysis
- Change management

C) Courses which address entrepreneurship directly:

- Business models' design, analysis and tools
- Entrepreneurial opportunities
- How to create and register a company/ start-up?
- Business ethics
- Managing, presenting and defending innovative projects
- Personal branding
- Entrepreneurial processes
- Entrepreneurial ecosystems
- Sales techniques and customers management
- Resources and capability analysis
- IT support for businesses (the use of clouds, multi-platforms, internet of things)
- Legislation for entrepreneurs
- Business documents
- Success stories of entrepreneurs

D) There are some instructions that can be offered to students involved in entrepreneurial activities, such as:

- Thinking out-of-the-box
- Pitching
- Lean start-up
- How to present your project to investors?

- **Project work:** *“While WBL programmes often include course-based and peer-group activities, for most the central component of the programme is project-based. Projects normally address real workplace issues with which learners are involved, and they are often an extension of activities that learners are in the process of undertaking... Activities may be small and localised... or they can be major undertakings that produce significant organisational or professional change and lead to the award of a doctorate”* (Lester and Costley, 2010).

Projects are very important for the development of intrapreneurial competences and skills and are set up by students in cooperation with the universities and their partners. Often, the project starts with the forming of a team although the project can also be done by individual students. The projects address a variety of technical, organisational, business, social and/ or art issues taken from real environments of various types of employers, from local communities to arts institutions, political organisations and many more. At the end of a project it is expected that a project team delivers a concrete solution in terms of a new business idea, analysis of competitive advantages and market potentials for a certain product or service, new

technological or organisational procedure, new production instrument/ tool, new product prototype, budget design, new fund raised, commercialisation of a certain product or service, marketing campaign design, an artistic exposition designed and set up, a plan for better city traffic and pathways design, etc. Such projects are not meant only as an exercise for students but as an attempt to find viable solutions for organisations and communities. In this respect they increase students' motivation and responsibility. They also demonstrate university's social responsibility.

Since students acquire entrepreneurial competences and skills while working on real work and life issues a close cooperation between students, university and organisations from the environment is needed. Employers identify challenging issues in their organisation including a description of context and expected solutions, provide intra-organisational supervision/ mentorship (if needed) and evaluate results. The university supervisor and/or mentor approves the project on the bases of expected learning outcomes, provides over-all guidance and evaluates the results from the study programme perspective. Students can carry out a project within the organisation and/ or in the classroom.

An intrapreneurship team meets regularly in order to plan the activities of members, to decide on the division of tasks, to monitor progress, to discuss issues that may arise among members and to meet with supervisors. Members of an intrapreneurship team are usually required to report their daily activities in a journal, to prepare interim, final and reflection reports in which the students not only describe what has been done but also evaluate their experiences with respect to how well they have been (theoretically) prepared for the intrapreneurship project, to evaluate the quality of supervisors'/ mentors' support, to report on experiences with team members etc. Another obligation of intrapreneurship team member would be to present the project interim and final results to organisation's and university's supervisors/ mentors and other representatives. Their reports, presentations and products are evaluated and validated by their supervisors/ mentors who usually form a jury to assess the final outcomes. The evaluation criteria include innovativeness/ originality, feasibility, market potentials, cost effectiveness, customers'/ clients' reactions and similar. Organisations may award students for project results or cover the costs incurred during the project.

Some examples of how to develop selected competences using various methods are given in table 4. They are mainly derived from WEXHE project cases. It should be noted, however, that some methods contribute to the development of more than one competence at the same time.

Table 4: MEANS OF STUDENTS' INTRAPRENEURIAL TRANSVERSAL/ GENERIC COMPETENCES DEVELOPMENT

SQF COMPETENCES	Knowledge	Skills	Autonomy and responsibility
General	Lecturing, seminars, field visits, online modules, writing assignment reports, study of literature and cases	Project work, business simulations, research, workshops, round tables, discussion groups	Reflection on theories, authors, technical and social issues, individual and group evaluation meetings, students' lecturing, seminars, round tables
Ability to manage projects and finances	Courses on general and applied management and decision making, on organisational theory, on finances, on production process engineering and systems.	Students elaborate real technical and social problems' solutions, practice 'school enterprise' approach, play managerial roles, prepare financial plans and balance sheets, raise funds.	Leave students to elaborate solutions of a certain problem autonomously and meet solution deadline, to find and select study sources, to present an issue and decide on the presentation style, to raise money for students' activities and to deal with finances.
Ability to make a business forecasting, planning and modelling	Courses on general and applied entrepreneurship, on business forecasting, planning and modelling, case studies of entrepreneurship models – success and failure stories.	Students are involved in intrapreneurship projects design. Experienced entrepreneurs take part in course and project work.	Foster autonomous students' intrapreneurship teams and projects. Discuss business social responsibility with students.
Capacity to generate new ideas (creativity and innovation)	Courses on general and applied psychology, techniques and methods of creativity, theory of innovation, intellectual property.	Foster generation and elaboration of innovative ideas among students. Organise and support students' intrapreneurship competitions.	Reward new ideas and proposals, allow mistakes, give a second chance, allocate time for incubation and reflection, avoid 'one solution only' situations.
Ability to make reasoned decisions (decision-making), to plan and manage time (organisational skills), and to cope with complexity, uncertainty, ambiguity and risk	Courses on organisational theory, decision making and entrepreneurship	Enhance students to organise project work, simulation, field research on their own. Encourage students to participate in civil society activities and to practice some student work.	Encourage students to organise autonomously extra-curricular activities including raising resources to finance them. Support students with some university resources, which they manage on their own and report on their utilisation.
Ability to search opportunities, value ideas and take initiative	Courses on entrepreneurship, evaluation theory and methods.	Involve students in innovation process: ideas generation,	Encourage students to try out their innovation ideas and plans.

		elaboration, presentation implementation and evaluation.	
Capacity to think critically, ethically and sustainable (self-reflection and self-awareness)	Courses on social economy, business ethics and on theory and practice of sustainability.	Discuss ethical and sustainability issues with students; ask students to prepare their introductory statements.	Enhance formation of a students' ethical committee, encourage students to take part in civil society sustainability actions and to make business plans for social economy, discuss their experiences in evaluation meetings.
Ability to work with others in a team (teamwork)	Courses on general and applied organisational theory, human resources management and psychology, team working course (types, composition, functions and management of teams)	Give assignments to project and study teams which students form on their own, encourage students to create their intrapreneurship teams.	Give feedback on student's performance in a team, monitor reactions of other team members. Enhance reflection on team dynamics.
Ability to communicate and negotiate	Courses on sociology, communication (written, oral, body), languages, negotiation, soft skills, intercultural communication course.	Students write and present reports, take part in the discussion and workshops, give lectures and seminars, do bargaining exercises between groups of students and with potential customers.	Provide clear business communication standards, provide opportunities for written and oral communication, for intercultural communication, initiate learning of languages.
Ability to motivate people and move towards common goals (leadership)	Courses on leadership, psychology, interpersonal skills, corporate organisation, change management, conflict resolution, intercultural leadership, business excellence.	Students chair sessions, workshops, seminars, coordinate projects, lead study groups, practice 'school enterprise', organise intrapreneurship competitions.	Give students the opportunity to step in a coordinative role, to create their own teams, invite students to take leadership roles in groups. Organise discussions on intrapreneurship with experienced entrepreneurs.
Ability to learn and stay up to date with learning (learning from failure)	Courses on pedagogics and didactics, blended learning, own learning/ learning how to learn	Encourage students to organise and to participate in autonomous study groups, and to study certain material for the presentation in a group.	Convey students the expectation to be updated with the development in his/ her professional field. Encourage them to take failures as lessons.

Assessment of students and certification

Mentors/ lecturers monitor students on the basis of their critical reporting in diaries, log books, or portfolios of work-based 'products' accompanied by evaluative comments highlighting what has been learnt. Other approaches could be the testing of and reapplying learning through discussion.

“Multiple and rigorous sources of information for assessment process is needed (e.g., up to date records of tasks and reflections in work-based learning, student journals, supervisors’ comments, competence against the relevant industry standards and direct observation of competencies performed in workplace settings). Reflective processes may be captured through e-portfolios, portfolio building, journals and post experience reports and presentations that can be peer-assessed, self-assessed and or assessed by academics” (Henderson and Trede, 2017).

The WEXHE cases describe some assessment and certification procedures and instruments applied by students, their mentors and lecturers. Frequently mentioned assessment instruments are:

- Students’ records/ diaries/ personal journals on daily/ weekly activities
- Students’ written reports on the projects’ realisation – interim and final
- Students’ physical/ oral/ video presentations of project reports and results – innovations, prototypes
- Students’ self-assessment and peer assessment
- Lecturers’ examination and assessment of students during or at the end of coursework
- Mentors’/ tutors’/ lecturers’ feedback to students
- Mentors’/ tutors’/ lecturers’ progress and final reports
- Jury’s assessment of problem solutions using a variety of criteria, such as: creativity/ innovativeness, relevance, feasibility, expected economic and social outcomes, investment needed, market potentials, level of elaboration, presentation, defence/ explanation of weak points, team quality etc.

Assessment methods and instruments should be specified in the study programme in order that every student and mentor/ lecturer knows them in advance. According to Little (2000) this information should include: what and for what purpose will be assessed, who will be involved carrying out assessment, what criteria will be applied, and in what form public recognition of the learning will be given. Special attention should be paid to the assessment of competences and skills specified in the programme. The WEXHE cases demonstrate that certification of intrapreneurial competences and skills is integrated into the study programmes. Students are awarded credits and marks after successful completion of the intrapreneurial activity.

ORGANISATIONAL ARRANGEMENTS AND PROCEDURES REGARDING LEARNING AND TRAINING

A learning module includes elements that are closely focused on the learning process. In order for learning to run smoothly some organisational arrangements are required. The key arrangements for entrepreneurial competences and skills development are in the hands of universities and collaborative external organisations and are described in the following paragraphs.

Process specification – sequence and description of activities

The process of setting up intrapreneurial training activities is composed of several activities and steps. These steps will be briefly described in terms of ‘who does what’. The sequence of these steps may vary from one programme to the other and some steps can be omitted. It should be noted that universities can successfully implement intrapreneurship training activities in collaboration with organisations that provide challenging technical or organisational issues to students’ intrapreneurship teams. The main steps are visible in the diagram 1. Some steps require deeper expertise that can only be mentioned and not presented in detail in this text.

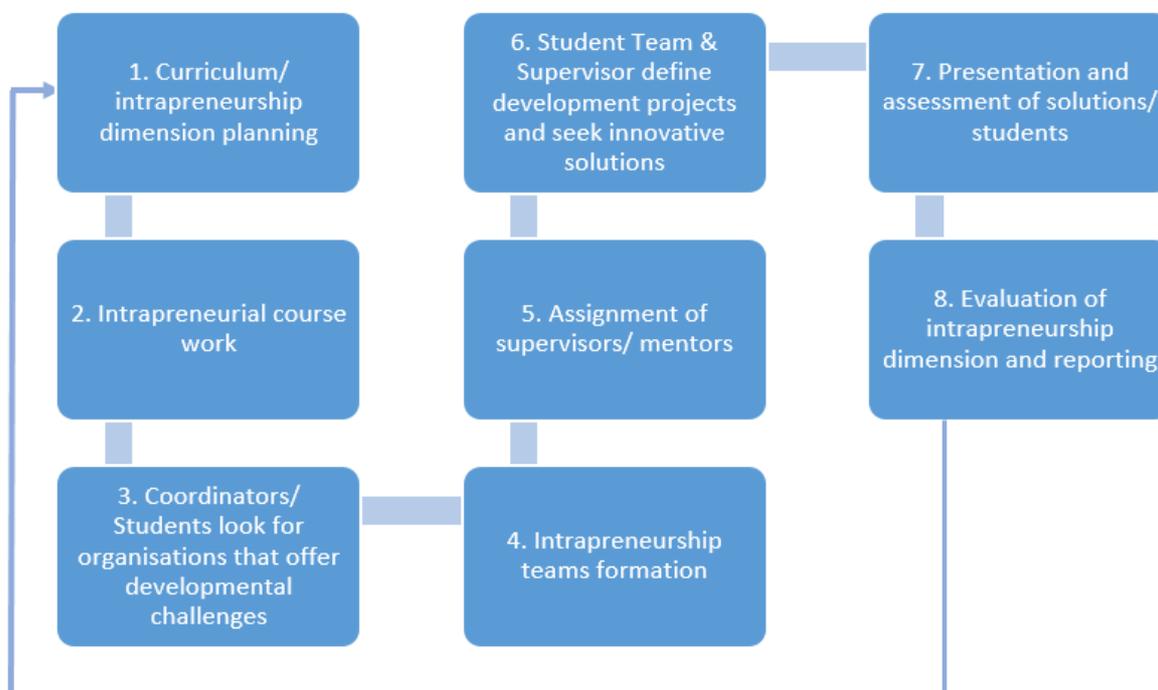
Curriculum/ intrapreneurship dimension planning: An intrapreneurship dimension planning in the curriculum includes decisions on:

- **Which specific courses will be offered, e.g., courses on creativity and innovation, leadership, teamwork etc.,**
- **Whether these courses will be rounded up in a specific intrapreneurship module,**
- **How to contribute to the development of intrapreneurial competences in other courses, e.g., using appropriate teaching methods,**
- **How to bring challenging development issues from organisations’ environments into the study process and how to organise work on projects: issues of students’ initiative, location of project work, teams’ composition, supervision, presentation of results, etc.,**
- **How achieved learning outcomes will be assessed and awarded.**

Intrapreneurial activities within curriculum are designed by the university intrapreneurship experts who are advised to consult experts from the world of work.

Intrapreneurial course work is needed to prepare students for the project work. While attending courses students acquire background knowledge needed for the formation of intrapreneurial teams, teamwork and team management, gain inspiration for innovative ideas generation, can elaborate business plans in technological, financial, marketing and human resources aspects, can present and defend business plans, can manage innovation processes, etc. Which courses universities offer depend on the study programme a student is involved in. According to the WEXHE cases the time allocated to specific intrapreneurial courses is rather limited which requires high selectivity in the choice of courses. Courses should be focused towards competences needed for intrapreneurship (innovative thinking). The more active approach is implemented in course delivery the better. Students must get a feeling of intrapreneurial practice already during course work. This is why in some cases course work and project work can be organised in parallel. Course work is a responsibility of university lecturers. However, involvement of practitioners can enrich it a lot.

Diagram 1: Entrepreneurial competences development process specification



intrapreneurial education is focused on real development challenges that organisations from various fields, such as industry, services, cultural organisations, local communities, etc. are facing. Students should have the opportunity to find such organisations themselves and to identify the issues to focus on during their project work. Over the course of time a network of organisations that offer challenges emerges. In this process university supervisors and mentors can help if students face difficulties. Generally, organisations are interested for such a cooperation because they expect students to bring new ideas and solutions into organisations and they look at students as potential employees in the future.

Intrapreneurship teams' formation is a usual step before students start working on a project. Various possibilities exist:

- A student having established contact with an organisation and identifying a challenging issue can form his/ her team by inviting his/ her colleagues.
- Students who know each other from participation in study programmes can team up and start searching for an appropriate organisation and project topic.
- Professors and tutors may advise specific individual students to form a team together, to contact certain organisations or to take action on a certain project topic.

Following the WEXHE cases 3 – 8 students are ideal for an intrapreneurial team. Smaller teams are easier to coordinate. The teams can be mono-disciplinary or inter-disciplinary

depending on the issue they want to address. Work of individual students can also be appropriate in some cases.

Assignment of supervisors/ mentors: Supervisors/ mentors can give their advice and opinions when student teams are formed. Supervisors/ mentors come from the university and from the involved organisation which provides the challenges student teams need to deal with. Both the mentor/ supervisor from the university and the mentor/ supervisor from the organisation must be trained and qualified for this role. The supervisor in the organisation helps students to find a challenging issue, helps to define a project, explains the organisational context, monitors project work and arranges presentation and evaluation of the results. A mentor's task is to support and empower students through trustworthy relations which will raise/ strengthen the student's self-confidence (Clouder, 2009). University mentors assist students in their career planning and in establishing contacts with organisations. Their role is also to enhance students' reflection on intrapreneurship experience which can be done in the reflection meetings.

Defining development projects (challenges) and seeking innovative solutions can be considered as the core of an intrapreneurial activity. It is highly desirable that the projects address real life technical, business, organisational, design, social, art etc. challenges in industrial, service, cultural or community organisations. During a project teams of students seek innovative solutions related to the improvement of current work processes or to the development of new products, services, technologies, businesses, cultural events etc. The teams can define projects in close collaboration with supervisors that offer developmental challenges and in collaboration with their university mentors. Some good examples are provided by the Dutch WEXHE cases, such as a 'Co-Challenge' where students of the Utrecht University solve problems for the Municipality of Utrecht, or in the 'Cultural Entrepreneurship' case where students of the Erasmus University of Rotterdam and of the Rotterdam University of Applied Sciences have to organise cultural performances individually or in cooperation with cultural institutions, such as museums, galleries and cultural centres. Other examples come from Germany where students of the Münster University of Applied Sciences involved in 'Projektstudium' work on projects, such as process optimization, introduction of new IT systems and optimizing logistic processes in close cooperation with companies, and where in 'Discovery Panel' projects students help researchers, NGOs and start-ups to check and upgrade their business ideas and marketing potentials.

Project work can be organised in many different ways with respect to its location (in the organisation, at the university, at the customers/ client's site, etc.), time, team structure and leadership, etc. An important point is that it enables active involvement of all participating students, that it addresses generic and specific competences needed to be intrapreneurial and that it is concluded by a reflection meeting of students and their mentors.

The presentation and assessment of solutions/ students is an integral part of a project work. Supervisors and mentors monitor students' project work directly. They also read students' reports and discuss these with them in group meetings. When projects are finished each team presents its results to the other teams, to supervisors/ mentors, juries, professors and representatives of participating organisations. During and after the presentations there are often discussions in which the audience poses questions, expresses opinions and evaluates the project results and presentations. The student teams defend the presented results. During the project mentors keep an eye on the progress students make towards expected project results and learning outcomes – development of competences. On this basis supervisors and mentors assess students and award them credits also taking into account the regular assessment of course work.

Evaluation of intrapreneurship dimension and reporting is focused on the assessment of an individual student and his/ her success in the course work, on students' intrapreneurship teams and their project results, and on the overall results of entrepreneurial competences development of students participating in the course. To some extent evaluation is carried out during the study and project work process. Final evaluation is usually made at the end of a certain period, e.g. a study year. The WEXHE cases indicate that evaluation is generally internal, carried out by universities and collaborative organisations. Evaluation results are reported to the coordinators of a study programme and to participating organisations. Essential in the report is to what extent the learning outcomes are achieved. On this basis study programmes can be improved. Reporting is a task of organisations' supervisors and university study programmes' coordinators.

Roles specification – tasks and responsibilities

The most frequently mentioned roles related to intrapreneurial activities at the universities are: coordinators, mentors and lecturers of individual courses, who often also take up the roles of directors and coordinators. Among the external people involved can be supervisors who work on projects together with one or two intrapreneurship teams and the university coordinator. There is also administrative support carried out by university staff. The main roles are shortly specified in the following paragraphs.

- **Mentors/ tutors/ coaches.** These roles are overlapping to a great extent. The difference is rather in the name and style than in the content. Mentors at the universities are usually lecturers of different courses or coordinators in charge of an intrapreneurial module if there is one. Mentors from outside the university can be invited from participating organisations. Mentors are assigned to an intrapreneurial team. Mentors will give advice to students on how they can do the project work. However, an important role of university mentors is overall guidance, support to students throughout their study, empowerment and trust building.

A mentor suggests students' participation in courses, seminars, workshops etc., helps during the formation of student teams, gives advice during the intrapreneurial project on how to overcome barriers, helps to identify possible solutions, monitors students' progress, keeps regular meetings with the team and gives feedback on their project progress, discusses their career perspectives and issues that may arise, organises group meetings with students, enhances students' reflection on the courses and projects, reports on the progress and performance of students, evaluates the intrapreneurial training process, etc. The main responsibility of a mentor is to guide a student towards successful achievement of the agreed learning outcomes, i.e. to enable students' realistic view on their intrapreneurship potentials, to motivate them for intrapreneurship and to help them develop competences needed for it. Their role is also to enhance students' reflection on intrapreneurship and to give career guidance. Mentors should in particular discuss with students business ethics including social relations in the organisation, social responsibility towards customers, clients, business partners, local community, wider society, environment etc.

Lester and Costley (2010) add some more functions of mentors/ tutors. *"The role of the tutor often moves, on the one hand, from being a teacher to being both a facilitator and an expert resource, and, on the other, from supervisor to advisor or 'academic consultant'... The role of a WBL tutor... will include:*

- *helping learners to become active in identifying their needs and aspirations and managing the learning process;*
- *acting as a process consultant;*
- *helping learners develop their abilities of critical reflection and inquiry;*
- *helping learners identify and work with ethical issues;*
- *helping learners make effective use of workplace resources;*
- *developing learners' academic skills and helping them use them in the workplace;*
- *providing specialist expertise, and*
- *inspiring and encouraging learners"* (Lester and Costley, 2010).

It is highly desirable that people taking up the role of mentors are trained for it like 'meister' in German companies. In several countries, SME associations organize training of mentors who work in companies including recognition of prior knowledge/ experiences, examination and certification of mentors' competences. Only mentors having official certificates should be allowed to take on this role. In some countries training of mentors has been included in the national qualification frameworks providing thus certification and public recognition to mentors. University mentors are supposed to be qualified for this role as university lecturers.

- **Coordinators** coordinate the activities of the other personnel involved in an intrapreneurial training activity: mentors, entrepreneurs, lecturers and students. They also help students to find organisations with challenging project issues if students do not find them themselves. Coordinators will have to do everything necessary for the intrapreneurial training activity to run smoothly: intrapreneurship module planning, organising the formation of student teams, finding organisations which will provide challenges project issues that students work on, organising presentations, assessment and evaluations procedures and reporting. The main responsibility of coordinators is that all the participating parties get relevant information on how to take up their roles, and that they all get assistance if and when needed. Henderson and Trede (2017) think that *“the establishment of centers in the university to facilitate purposeful, organized, and ‘assessable’ work-based learning in academic programs is beneficial. Such centers provide ‘lead’ individuals with specific education and expertise...”* *“Universities will have to establish specific structures that are responsible for the special needs of WBL pathways... and of the groups of learners engaged in this kind of learning experience. Specifically trained teaching and tutoring staff with high academic qualifications as well as social awareness and human sensitivity must be employed in this field...”* (Schmidt and Gibbs, 2009).

FINANCING

Intrapreneurial training activities infer some costs to universities and collaborative organisations. There are costs of equipment and materials that students need, costs of personnel involved in training (coordinators, mentors, etc.) if they are additionally remunerated or employed particularly for the training purposes, etc. Most of these costs are covered by organisations that provide projects. These organisations expect the inflow of new ideas/ knowledge and solutions of concrete issues. They look at students as potential future employees. They often financially reward students with good or the best innovative outcomes/results. Universities cover the costs of their own personnel since intrapreneurial training activities are integrated in the university curricula. In some countries, e.g., Slovenia, Government provides subsidies to the universities/ intrapreneurial teams in order to enhance this dimension in the study programmes.

QUALITY ASSURANCE, EVALUATION AND ACCREDITATION

Quality assurance, evaluation and accreditation of intrapreneurial training activities remain an internal university issue in most of the WEXHE cases. Various quality assurance and evaluation activities are mentioned that students and their mentors are expected to perform. The **quality** is usually assured by:

- Well prepared curriculum
- Well trained lecturers having experience in (project) education that requires intrapreneurial thinking
- Training of mentors for their teaching and coaching roles
- Good cooperation between students, universities and organisations providing project issues
- Mentors' and supervisors' counselling and giving advice to students
- Regular meetings of mentors and supervisors with their students including their reports to coordinator

Evaluation procedures will include providing feedback regarding the quality assurance. It can be performed by those involved in intrapreneurial training activities – internal evaluation or by externals, e.g., evaluation agencies. There could be an overall evaluation of intrapreneurial training activities stressing its effectivity and efficiency, satisfaction of participants etc., or focusing more, e.g., on the roles of mentors and coordinators, on the quality of courses and projects, etc. It can take various forms, such as:

- Students' evaluation of course works and projects by means of questionnaires
- Mentors'/ supervisors' evaluation of projects by means of questionnaires or by means of reports to coordinators
- Evaluation seminars/ workshops organised for the group of students
- Coordinators' evaluation and reports
- External agency's evaluation.

The evaluation criteria should be specified. Special attention should hereby be paid to whether students meet the goals and objectives of intrapreneurial training activities, i.e., to what extent the competences and skills specified in the programmes are developed in the course of study and to what extent the learning outcomes are achieved.

The WEXHE cases show that intrapreneurial training activities tend to be an integral part of a curriculum and study programme and are thus directly accredited and publicly recognised. A successfully completed intrapreneurial training activity provides students with credit points which contribute to meeting their study requirements.

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APPENDICES

Appendix 1 – Examples of cases illustrating Intrapreneurship/ Innovation component of study programmes:

- Discovery Panel (Germany)
- Projektstudium (Germany)
- Cultural Entrepreneurship (Netherlands)
- Co-Challenge (Netherlands)

GLOSSARY

For composing this list of terms and their definitions, the following sources have been used among others: Tuning Educational Structures in Europe, *Universities' contribution to the Bologna Process. An introduction*. 2nd Edition, Bilbao and Groningen, 2008; Jenneke Lokhoff a.o. eds., *A Tuning Guide to Formulating Degree Programme Profiles. Including Programme Competences and Programme Learning Outcomes*. Bilbao, Groningen and The Hague, 2010; CEDEFOP, *Terminology of European education and training policy. Second Edition. A selection of 130 key terms*. Luxembourg: Publications office of the European Union, 2014. European Commission, *ECTS Users' Guide 2015*. Luxembourg: Publications office of the European Union, 2015.

Ability:

Acquired or natural capacity, competence, proficiency or talent that enables an individual to perform a particular act, job or task successfully.

Accreditation of an education or training programme:

A process of quality assurance through which a programme of education or training is officially recognised and approved by the relevant legislative or professional authorities following assessment against predetermined standards.

Active learning:

An approach to instruction that involves actively engaging students with the course material through discussions, problem solving, case studies, role plays and other methods. It is opposed to passively taking in the information.

Allocation of ECTS credits:

The process of assigning a number of credits to qualifications, degree programmes or single educational components. Credits are allocated to entire qualifications or programmes according to national legislation or practice, where appropriate, and with reference to national and/or European qualifications frameworks. They are allocated to educational components, such as course units, dissertations, work-based learning and work placements, taking as a basis the allocation of 60 credits per full-time academic year, according to the estimated workload required to achieve the defined learning outcomes for each component.

Apprenticeship:

Systematic, long-term training alternating periods at the workplace and in an educational institution or training centre. The apprentice is contractually linked to the employer and receives remuneration (wage or allowance). The employer assumes responsibility for providing the trainee with training leading to a specific occupation. The term originates and is in particular applied in Vocational Education and Learning. WEXHE advises to avoid using the term in higher education, with the exception of *dual learning*.

Competence:

The ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development. Fostering competences is the object of all educational programmes. Competences are developed in all course units and assessed at different stages of a programme. Some competences are subject-area related (specific to a field of study), others are generic (common to any degree course). It is normally the case that competence development proceeds in an integrated and cyclical manner throughout a programme.

Course unit:

A self-contained, formally structured learning experience. It should have a coherent and explicit set of learning outcomes, expressed in terms of competences to be obtained, and appropriate assessment criteria. Course units can have different numbers of credits, although it is recommended that units carry a uniform number of credits or a multiple thereof. These units, with thesis work and work placements where appropriate, are the building blocks of programmes.

Degree programme:

The set of educational components leading to the award of a degree to a student after successful completion of all the requirements.

Diploma Supplement:

The Diploma Supplement (DS) is a document accompanying a higher education diploma, providing a standardised description of the nature, level, context, content and status of the studies completed by its holder. It is produced by the higher education institutions according to standards agreed by the European Commission, the Council of Europe and UNESCO. The Diploma Supplement is also part of the Europass framework transparency tools.

ECTS credits:

ECTS credits express the volume of learning based on the defined learning outcomes and their associated workload. 60 ECTS credits are allocated to the learning outcomes and associated workload of a full-time academic year or its equivalent, which normally comprises a number of educational components to which credits (on the basis of the learning outcomes and workload) are allocated. ECTS credits are generally expressed in whole numbers.

Elective:

A course unit that may be taken as part of a study programme but is not compulsory for all students.

Entrepreneurship:

Entrepreneurship is the act of creating a business or businesses while building and scaling it to generate a profit.

European Credit Transfer and Accumulation System (ECTS):

A learner-centred system for credit accumulation and transfer, based on the principle of transparency of learning, teaching and assessment processes. Its objective is to facilitate planning, delivery and evaluation of study programmes and student mobility by recognising learning achievements and qualifications and periods of learning.

European Qualifications Framework for Lifelong Learning (EQF):

The European Qualifications Framework for Lifelong Learning is a common European reference tool for describing and comparing qualification levels in qualifications systems developed at national, international or sectoral levels. The EQF uses eight reference levels based on learning outcomes that are defined in terms of knowledge, skills and autonomy and responsibility.

Evaluation:

Evaluation of teaching and academic studies in a subject or department and the related degree programmes comprises all those activities which aim at assessing quality and fitness for purpose and of purpose. Strengths and weaknesses of education and training can be identified by stocktaking, analysis and proposals formulated to ensure the sustainability of quality. Evaluation may be carried out through both internal and external procedures. Internal evaluation comprises the systematic collection of administrative data and obtaining feedback from staff, students and graduates, as well as holding structured conversations with lecturers and students. External evaluation may include visits by a review team to the department in order to review the quality of the academic studies and teaching, the use of external examiners, external accreditation, etc. A significant element in enhancing quality is ensuring that internal and external procedures are used to improve student learning.

Formal learning:

Learning typically provided by an education or training institution, which is structured (in terms of learning outcomes, learning time and learning support) and leads to certification.

Framework for Qualifications of the European Higher Education Area (QF-EHEA):

An overarching framework at European level that makes transparent the relationship between national higher education frameworks of qualifications of the different European countries and the qualifications they contain. It is an articulation mechanism between national frameworks. It is characterised by credit ranges.

Generic competences:

Generic Competences are also known as transferable skills or general academic skills. They are general to any degree programme and can be transferred from one context to another, although they have normally been developed in the context of a particular academic field of study.

Informal learning:

Learning resulting from daily activities related to work, family or leisure which is not organised or structured in terms of objectives, time or learning support; it may be unintentional from the learner's perspective; examples of learning outcomes acquired through informal learning are: skills acquired through life and work experiences, project management skills, ICT skills acquired at work, languages learned, intercultural skills acquired during a stay in another country, ICT skills acquired outside work, skills acquired through volunteering, cultural activities, sports, youth work and through activities at home e.g. taking care of a child (EU Council Recommendation 2012/C 398/01).

Internship:

A period of work experience offered by an organization for a limited period of time. Initially to medical graduates, internship is nowadays used for a wide range of placements in businesses, non-profit organisations and government agencies. They are typically undertaken by students and graduates looking to gain relevant skills and experience in a particular field. Interns may be high school students, college and university students, or post-graduate adults. These positions may be paid or unpaid and are temporary. An internship often comes in addition to the actual study programme. WEXHE advises to avoid the term internship and to use the term work placement in a higher education setting instead, because the last expresses that this mode of learning is an integral part of the programme.

Intrapreneurship:

Refers to a system that allows an employee to act like an entrepreneur within a company or other organization. Intrapreneurs are self-motivated, proactive, and action-oriented people who take the initiative to pursue an innovative product or service. Intrapreneurship is known as the practice of a corporate management style that integrates risk-taking and innovation approaches, as well as the reward and motivational techniques, that are more traditionally thought of being typical for entrepreneurship.

Learning Outcomes:

Statements of what a learner knows, understands and/or is able to do on completion of a learning process. The achievement of learning outcomes has to be assessed through procedures based on clear and transparent criteria. Learning outcomes are attributed to individual educational components and to programmes at a whole. They are also used in European and national qualifications frameworks to describe the level of the individual qualification. In WEXHE they express level of intended and/or achieved competences.

Learner:

An individual engaged in a learning process (formal, non-formal or informal learning). Students are learners involved in a formal learning process.

Lecture:

A discourse given before an audience or class especially for instruction.

Lecturer:

A teacher at a university or college, who offers guidance to students in their learning process, e.g. offering instruction (lectures, seminars, assignments) and support and assess students work.

Levels:

Levels are understood to be a series of sequential steps to be taken by the learner (within a development continuum) expressed in terms of a range of generic outcomes, within a given programme.

Level descriptor:

Generic statements describing the characteristics and context of learning expected at each level against which learning outcomes and assessment criteria can be reviewed. They are also

intended to guide the learner, teacher and curriculum with respect to the complexity, relative demand and learner autonomy. These general descriptors can be applied to specific subject disciplines and ways of learning. Level descriptors are useful for curriculum design, assignment of credit, validation, guidelines for recognition of learning from experience and of non-formal learning and for staff development.

Lifelong learning:

All learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective. Programmes and services contributing to lifelong learning within the higher education sector may include mainstream programmes, continuing education, evening classes, specific programmes for part-time learners, access to libraries/higher education institution resources, distance learning, training courses, targeted guidance and counselling services among other actions and initiatives.

Mentor:

A member of staff at a company or institution who gives a learner/student help and advice over a specific period of time at work or at a (higher) education institution.

Module:

A course unit in a system in which each course unit carries the same number of credits or a multiple of it.

National Qualifications Framework (NQF):

An instrument for the classification of qualifications according to a set of criteria for specified levels of learning achieved, which aims to integrate and coordinate national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labour market and civil society.

National qualifications frameworks encompass all education qualifications – or all higher education qualifications, depending on the policy of the country concerned – in an education system. They show what learners may be expected to know, understand and be able to do on the basis of a given qualification (learning outcomes) as well as how qualifications within a system articulate, that is how learners may move between qualifications in an education system. National qualifications frameworks are developed by the competent public authorities in the country concerned, in cooperation with a broad range of stakeholders – including higher education institutions, students, staff and employers.

Prior learning (assessment) (PLA):

Is learning gained outside a traditional academic environment, e.g. while working, participating in employer training programs, serving in the military, studying independently, volunteering or doing community service, and studying open source courseware. PLA is the evaluation and assessment of an individual's life learning for higher education credit, certification, or advanced standing toward further education or training.

Qualification:

Any degree, diploma or other certificate issued by a competent authority attesting the successful completion of a recognised programme of study.

Quality assurance:

The process or set of processes adopted nationally and institutionally to ensure the quality of educational programmes and qualifications awarded. Quality assurance should ensure a learning environment in which the content of programmes, learning opportunities and facilities are fit for purpose. Quality assurance is often referred to in the context of a continuous improvement cycle (i.e. assurance and enhancement activities).

Recognition (academic recognition):

Approval of courses, qualifications, or diplomas from one (domestic or foreign) higher education institution by another for the purpose of admitting students to undertake further studies.

Skill:

A learned capacity to achieve pre-determined results often with the minimum outlay of time, energy, or both. Skills are often divided into general/generic and subject specific skills.

Student:

A learner enrolled on a formal educational programme at a higher education institution.

Student-centred Learning:

A learning approach characterised by innovative methods of teaching which aim to involve both students and teachers in the learning process. This implies that students are active participants in their own learning, fostering both subject specific competences (knowledge and skills) and generic competences such as problem-solving, critical and reflective thinking, creativity and entrepreneurship, teamwork and project work.

Subject specific competences:

Competences related to a specific subject area. They cover both knowledge and disciplinary skills key to the subject area.

Supervisor:

Member of academic staff of the University who monitors the progress of a student by providing advice and guidance for thesis work, but also for work-based learning.

Teacher:

See lecturer.

Traineeship:

A type of work-based learning that is aimed at students who have finished their educational training (graduated students) but have not yet entered the labour market. It includes not just structured trainee programmes aimed to attract new talents and prepare them for leadership roles - normally offered by larger organizations, but also schemes for the reinsertion into the workforce.

Transformative learning:

Transformational learning is the process of deep, constructive, and meaningful learning that goes beyond simple knowledge acquisition and supports critical ways in which learners

consciously make meaning of their lives. It is the kind of learning that results in a fundamental change in our worldview as a consequence of shifting from mindless or unquestioning acceptance of available information to reflective and conscious learning experiences that bring about true emancipation.

Transversal skills:

See generic competences.

Tutor:

A staff member who gives individual or small group instruction. In a student-centred environment, he or she is also expected to help students help themselves, and to assist or guide them to the point at which they become independent learners.

Work-based learning:

Learning delivered by a university, college or other training provider in the workplace, normally under the supervision of a person from the same company as well as a professional teacher from outside the company.

Workload:

An estimation of the time learners typically need to complete all learning activities such as lectures, seminars, projects, practical work, work placements, individual study required to achieve the defined learning outcomes in formal learning environments. The correspondence of the full-time workload of an academic year to 60 credits is often formalised by national legal provisions. In most cases, student workload ranges from 1,500 to 1,800 hours for an academic year, which means that one credit corresponds to 25 to 30 hours of work. It should be recognised that this represents the normal workload and that for individual learners the actual time to achieve the learning outcomes will vary.

Work placement:

A planned period of experience outside the institution (for example, in a workplace) to help students to develop particular skills, knowledge or understanding as part of their programme. A work placement is an integral part of the curriculum.

Work Placement Certificate:

A document is issued by the receiving organization / enterprise upon the trainee's completion of the work placement, and it can be complemented by other documents, such as letters of recommendation. It aims to provide transparency and bring out the value of the experience of the student's work placement.