

E³UDRES²

Engaged and Entrepreneurial European University as
Driver for European Smart and Sustainable Regions

3. E³UDRES² Learners & Educators

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1. Introduction

The focus in the growth document after the first 6 months of E³UDRES² was mainly building the foundations in WP3. A basic concept for the I Living Lab was developed and a workflow within the team members was organised.

Going to 1 year of E³UDRES², this document looks back at the last 6 months in WP3. Building up from the foundations, the concept of the I Living Lab deepened and got translated in practical applications to be used in the I Living Lab. Besides this, a lot of time was invested in coaching and training our continuously growing team of Educational Entrepreneurs and building both our regional and European community.

As a result of these choices, this report focuses mostly on the perspective of Educational Entrepreneurs, as they are keys in the success of the I Living Labs. They are the first point of contact for a learner, so they are the best ambassadors of E³UDRES². The learning path of an educational entrepreneur, from teacher/lecturer to facilitator is described.

When taking that much time in training and coaching our team members, a E³UDRES²culture is being built as well. When having a specific culture, a start is made for a sustainable network in the future.

Participants of the project are definitely not where they should be, but growth and improvement continue as the learners are expected to develop as well. This document will, therefore, describe that constant growth, including both the improvements that have been made and also the challenges WP3 members have come across.

2. The concept of an I Living Lab

2.1 In general

E³UDRES² chooses to develop I Living Labs as a means of founding a university of the future and developing smart and sustainable regions. These I Living Labs rely on human-centred learning techniques as well as research and open innovation environments which help the I Living Lab stakeholders gain and train future skills and co-create solutions to relevant challenges.

The I stands for inspiring, innovative, intercultural, international, interdisciplinary, intersectoral, inclusive and intense. This is what makes our I Living Labs stand out from the traditional concept of Living Labs that has been known for a longer time.

In the growth document (M6), the foundations of an I Living Lab are defined: co-creation, transdisciplinary, stakeholders, learning outcomes and assessment. The figure below sums up how these components together make up an I Living Lab.

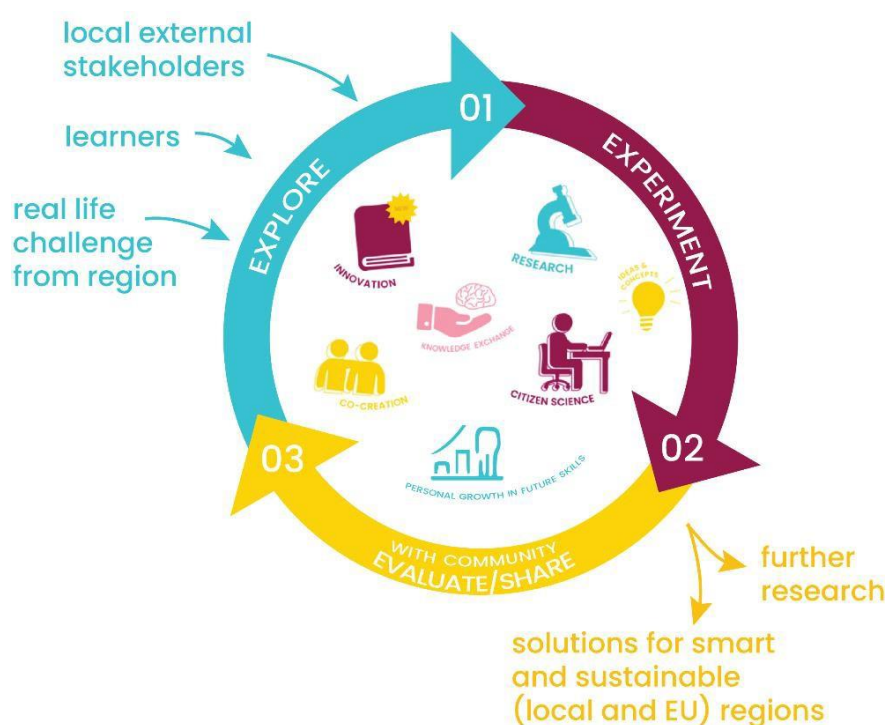


Figure 1: The concept of an I Living Lab

The participants of an I Living Lab are a group of learners. These **learners** are:

- **stakeholders** who bring challenges or questions to the table;
- **learners** who create a solution or new idea in the I Living Lab and also;
- the facilitator, the so-called **educational entrepreneur** who facilitates the process.

The different learners come from different HEIs and from different backgrounds and courses, comprising in other words a **transdisciplinary** team. Together, they **co-create** a solution to a problem, making use of the methodology of Design Thinking. In doing so, all learners develop specific competences which, in case of the students, are validated after an **assessment** which is linked to the **learning** outcomes. Developing future skills plays an important role in these learning outcomes.

Each I Living Lab incorporates the following building blocks, going through the innovation development phases:



Figure 2: Phases of Innovation Processes (U4IoT, 2019)

These phases can be defined as follows:

- **Exploration:** getting to know the current state and designing possible future states;
- **Experimentation:** real-life testing of one or more proposed future states;
- **Evaluation:** assessing the impact of the experiment with regard to the current state in order to iterate the future states.

2.1.1 Living Labs: common elements

Traditional Living Labs have been used for years and in different settings (such as industry, sustainable development and higher education). Research has shown that there are different ways of designing such a Living Lab depending on the different goals, but also that certain common elements are part of each Living Lab, as illustrated in the figure below.

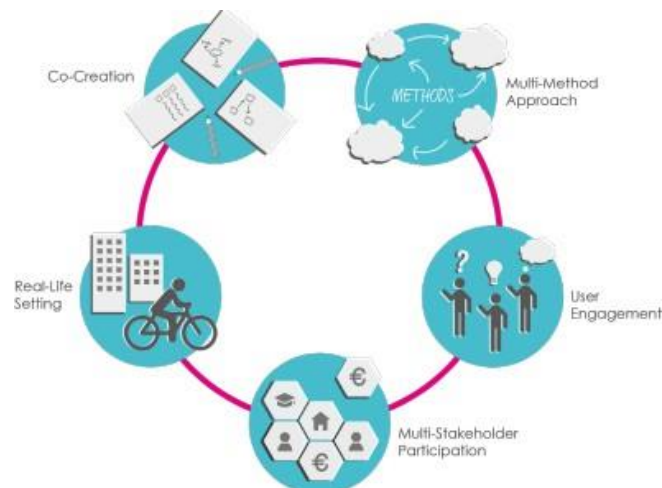


Figure 3: Common elements of all Living Labs (U4IoT, 2019)

All of these common elements are also present in the I Living Labs of E³UDRES²:

- **Multi-method approach**
The Educational Entrepreneurs use different methods throughout their I Living Labs. One of them will be Design Thinking, as it is a methodology to ensure learning for the unknown. It involves researching the challenge, empathising with stakeholders, defining the problem, ideating as many solutions as possible and prototyping and testing them (Westerlund, 2018). Depending on the specific problem in the I Living Lab, different user-centred co-creation methods will be used.

I Living Labs also make use of different modalities, as they traditionally include at least one physical international week but also build on several COIL techniques, challenging the participants to hone their multicultural and digital skills simultaneously. More about this in chapter 2.2.2.

- **User engagement**

Learners and stakeholders are involved in each I Living Lab immediately from the start. To encourage engagement, participation and contribution, the Educational Entrepreneurs must reinforce and invest in the users' intrinsic and extrinsic motivations. Intrinsic motivation come from working towards or achieving a goal within the community. Extrinsic motivation refers to the external factors that encourage participation such as recognition of an organisation, publicity, reputation, monetary incentives and reciprocity of solutions (Westerlund, 2018).

The success of this encouragement of user engagement strongly depends on the successful creation of a safe environment for the stakeholders of an I Living Lab. In case of the I Living Labs, the Educational Entrepreneurs are trained to be culturally aware and are invited to spend time creating group safety and cohesion at the start of each I Living Lab. More about this in chapter 2.2.1.

- **Multi-stakeholder participation**

Involving stakeholders is of crucial importance in each Living Lab. Within E³UDRES², stakeholders play an important role in the connection with the local environment. The I Living Labs are created through citizen science engaging local stakeholders as co-researchers either as sensors, as basic interpreters, as problem definers and data collectors or as collaborators throughout the whole research process (Hakley, 2013).

In the I Living Labs, all stakeholders involved are also challenged to learn, which brings us back to the human-centred learning approach. The traditional learners are the students, but also the Educational Entrepreneurs, the policymakers, the industry and the end user are invited to share their learning experiences in a series of reflective exercises.

The aim of this multi-stakeholder participation in an I Living Lab is to create an engaged university. One of the main goals of E³UDRES².

- **Real-life setting**

This characteristic is very specific for Living Labs and is also an important part of I Living Labs in E³UDRES². Working in and with real-life settings serves multiple purposes. First of all, it is this connection with the region that allows us to strengthen the region with the ideas, suggestions and potentially prototypes that sprout from the I Living Labs. Secondly, we show learners that they can make a difference in their region by participating in our I Living Labs, and afterwards hopefully in their real-life.

In doing this, we create an impact on the region in the short and long run, with ideas being delivered to solve challenges and stakeholders being challenged to train their future skills. In other words, real-life setting is vital to the setting of an I Living Lab and to its impact.

Real-life setting in I Living Labs is incorporated in different ways. Most obvious is the use of a real-life challenge in an I Living Lab. But real-life challenges from the local regions are also used in the flow leading up to the I Living Lab, as educational

entrepreneurs select their I Living Lab topics in step 1 and 2 of The Game (see chapter 3.2)

- **Co-creation**

Co-creation consists of four core areas: co-analysis, co-design, co-evaluation and co-implementation. Going through these areas helps to discover new insights and to think outside-the-box in order to find new solutions. Within an I Living Lab, learners and stakeholders go through these four areas as well. Depending on the complexity or limitations of the challenge, they will be able to fulfil these areas within the limited timeframe of an I Living Lab

As described in the Living Lab Methodology Handbook (2019): „Typically, activities are designed as top-down experiments, benefiting from users being involved as factors rather than actors. There is an increasing recognition that this needs to change so that users become equal contributors and co-creators rather than subjects of studies. A Living Lab approach strives for mutually valued outcomes that are results of all stakeholders being actively engaged in the process from the very beginning”. In the I Living Labs learners and stakeholders will be co-creating solutions, involving also the end users from the start. More about this in chapter 2.2.2.

The co-creation part seems to be in contradiction with citizen science (see above: multi-stakeholder participation), but in fact both co-creation and citizen science contribute to the main aim, that is, developing sustainable regions. As the E³UDRES² I Living Labs are currently being developed and tested as the project evolves, data are needed from the I Living Labs through citizen science to continuously keep improving.

Finally, it is important to note that the I Living Labs in E³UDRES² are innovative because of the way the different building blocks in such an I Living Lab are constructed. More concrete this can be seen in step 3 – 6 in the GAME. In other words, the innovation lies in the way the different components illustrated in figures 1, 2 and 3 are defined as well as in the way they are linked to each other. The following section discusses these core elements in greater detail, thus shaping the E³UDRES² educational model and culture.

2.1.2 I Living Labs: unique elements

The following key components make the I Living Labs stand out from the rest:

- **Embedded in curriculum with focus on future skills**

First of all, I Living Labs are all embedded in the organisational structure of a HEI, which makes an I Living Lab a module that students should integrate into their study programme. Therefore, an I Living Lab also has a pedagogical layer, for which it makes use of hybrid learning techniques.

As a module, an I Living Lab does not focus on subject-specific knowledge, but solely on acquiring future skills because research has shown that future skills are important for the jobs of the future. An employee with future skills is more resilient and able to transform along with the changing labour market.

Finally, the importance of the development of future skills amongst the different stakeholders in an I Living Lab is also reflected in the ultimate goal of the E³UDRES² project, which is the development of future universities and smart and sustainable regions. More information in chapters 2.2.3.

- Pedagogical concept

Hybrid learning in this context entails a well-considered, varied mix of different dimensions adapted to the diversity of the target group, the challenge and the learning outcomes. The fact that it concerns a mix that is well-thought-out implies a conscious (advance) consideration of which learning environment stimulates the student in the most optimal way in the development towards the intended profile: a learning environment in which the different learning contexts, learning activities, teaching methods, materials, etc. reinforce each other and thereby increase student motivation and engagement. It is therefore necessary to consult with various partners about creating such a varied mix that takes the context into account.

This well-thought-out, varied mix involves learning, assessment activities and learning materials with an integration of four dimensions, namely:

- **Online and face-to-face learning:** integration of learning activities via a/the digital learning environment and live contact/the physical learning environment;
- **Asynchronous and synchronous activities:** integration of learning activities that can be completed by students virtually simultaneously and freely;
- **Organised or casual activities:** integration of structured and formal learning activities and unstructured and informal learning moments;
- **Individual and group activities:** Integration of individual learning activities and group activities.

These four dimensions are an important part of the concept of an I Living Lab:

- Some I Living Labs will be run completely online, others will make use of face-to-face meetings in an international week combined with online learning. The choice for these 2 variations is based on the idea to opt for a maximum inclusion strategy as not all students are able to take time of daily life and go abroad for a few days.
- In an I Living Lab, there will always be synchronous activities for co-creating, but also asynchronous activities in which the learner explores the challenge, collect information, look for inspiration, or research.
- Learners will co-create in the formal setting of a meeting, but can find each other outside meetings to share ideas, knowledge and inspire each other.

In this context, it is important to note that the main reasons to opt for hybrid learning as a HEI are, according to Graham et al. (Graham, Allen and Ure, 2005):

- A qualitative improvement in education through a positive impact on learning activity and student satisfaction (Schneider & Preckel, 2017);
- Optimisation of access and flexibility of education;
- More efficient use of available resources.

In I Living Labs, hybrid learning is shaped in the following ways:

1. Role of student

When designing an I Living Lab for a challenge, the needs of the students concerning hybrid learning need to be explored, because students are expected to co-create the concept of the I Living Lab, as well as the specifics of an I Living Lab. From September 2021 onwards, the recruitment of a student board starts, so students will soon play a vital role in each I Living Lab. So, a student can take up the role as a learner, but also as a co-creator of the E³UDRES² I Living Lab.

In addition, the E³UDRES² student board can research how learners could be triggered to invest in network development and community building.

2. Role of the facilitator

As already described in the growth document (M6), the teacher switches from a role as knowledge-expert to the role of expert. Specific competences and information is required. Therefore, a training is designed. The question that needs further investigation towards M18 is how to professionalise and educate the Educational Entrepreneurs about all aspects of the ILL.

Finally, there is the need for a tool which can help ensure that all I Living Labs use a well-thought-out and varied mix of learning activities. We developed a study guide for all I Living Labs which includes common and specific sections (see annex 2).

3. Role of the region

The stakeholders are an important partner in the designing of the I Living Lab as they are also learners. Their feedback helps to shape the I Living Lab into a concept of value for the region. Ultimately, they also serve as input to help decide in what way the third space will be used as a learning environment, in combination with the digital and campus learning environment.

It is the role of the region which is a crucial part in designing an engaged as well as an entrepreneurial university.

- Inclusiveness as key element

The actors of an I Living Lab are mostly students from a given HEI as well as external stakeholders from the region at hand. Their common goal is to create the change required to transform their region into smart and sustainable regions.

Because of the international and transdisciplinary character of this group of actors, there are challenges for inclusiveness such as language barriers, elitism, religion, expenses and cultural barriers. The first I Living Labs will show if the Educational Entrepreneurs have sufficient skills to embrace the diversity within the group.

Also, when designing an I Living Lab, educational entrepreneurs take inclusiveness into account. This is seen in the connection between personalised learning and its choice trajectory (see chapter 2.2.5), the multicampus and its choice opportunity and the alternation between a completely online I Living Lab or an I Living Lab with international mobility and face-to-face synchronous learning, as a way to heighten inclusiveness.

- Link between region and Europe

The main focus of an I Living Lab is the development of smarter and more sustainable regions, but in doing so with an international team of learners I Living Labs also contribute to a smarter and more sustainable Europe as the knowledge developed benefits all project partners. In The Game educational entrepreneurs link their good practices and challenges from their region to other regions, going from local to global.

2.1.3 Conclusion

The cornerstone of the E³UDRES² educational model is the concept of the I Living Lab. In these I Living Labs, various types of learners, ranging from students to external stakeholders and educational entrepreneurs, are challenged to co-ideate and co-create innovative smart and sustainable solutions to local challenges. They do this in international transdisciplinary teams, bringing international knowledge into their communities. All I Living Lab participants are challenged to hone their future skills so as to become change agents.

The concept of the I Living Labs builds on the existing model of Living Labs as such. A multi-method approach, user engagement, multi-stakeholder participation and focus on co-creation in a real-life setting is what both concepts have in common. They also both make use of the different phases of innovation development: exploration, experimentation and evaluation.

What makes the E³UDRES² I Living Labs stand out from more traditional Living Labs, is the definition of certain key components as well as the way these are linked with each other. Not only are all E³UDRES² I Living Labs embedded in the curriculum, they also all have a strong focus on the acquisition of future skills. In addition, I Living Labs make use of hybrid learning, which has an impact on the role of the student, the teacher and the regional stakeholders. The importance of inclusion in bringing European expertise into the local communities is a final key characteristic.

In conclusion, I Living Labs help E³UDRES² engage with the local community, as solutions to local challenges can only be developed through regional and international engagement. The focus on future skills makes for future-proof graduates with an entrepreneurial mindset. In short, the I Living Labs embody the engaged and entrepreneurial spirit of this European university.

2.2 From the perspective of the teacher

2.2.1 Multicultural awareness

Innovative pedagogy is still a challenge for a number of teachers in higher education. More than bringing new tools and apps to the classroom, innovation of our mindset is required. To involve all the students in their learning, and providing autonomy in their path towards future skills, the learning process must move from the perspective of the teacher to the diverse perspectives of students.

The concept of “multicultural awareness” does not apply exclusively to groups of students from different geographic origins or different cultures. It is underpinned by a broad idea of “culture”, and, in the educational contexts, it may be included in the frame of Pedagogical Inclusion. It relies more on each person’s identity than with tags defining assumptions about groups. Even when there is a group of students, all from the same nationality, each one of them has their unique individual family history, crossing several cultural traditions, relating to literacy in diverse ways, which may frame the starting point for establishing personal goals and academic success differently.

The question of identities within multicultural environments has been addressed in a stimulating way by Amin Malouf (2020), in his book *On Identity*, an excellent suggestion of reading to introduce a complex theme with educators and learners. As the author expresses:

“What makes myself rather than anyone else is the very fact that I am poised between two countries, two or three languages, and several cultural traditions. It is precisely this that defines my identity. Would I exist more authentically if I cut off a part of myself?” Amin Malouf (2020).

In E³UDRES², a new inspiring culture in higher education is aimed at, being aware of all needs and also the settings and/or background. One innovative characteristic feature of E³UDRES² ILL is that co-creation involves the “learning to accurately perceive and understand cultures and backgrounds of other persons” (Sandell & Tupy, 2015). Working together, using diverse constructive ideas from each student as an input, collaborating to find better solutions for common interest requires the capacity to be attentive to each co-worker, to respect individual specificities (cultural background, gender, religion, social origin, range of interest) and to value the differences.

As written in the project proposal, “despite geographical, economic and cultural diversity, European regions face many common challenges to be addressed by E³UDRES²: (1) social distances (demographic change, social inclusion, migration, regional, national and European identities), (2) spatial distances (mobility in rural areas), (3) technological distances (tradition vs. innovation, digitalisation vs. crafts, disruptive technologies, digital literacy, media literacy), (4) structural distances (urban vs. rural areas, metropolises vs. small and medium-sized cities, globalisation vs. regional issues). E³UDRES² follows the idea “From Europe – For Europe” by developing European solutions to regional problems in a globally connected world and, therefore, pooling knowledge, core competencies and skills as well as sharing resources of the following six higher education institutions” (E³UDRES², 2020).

Likewise, while preparing each ILL, Educational Entrepreneurs will reflect on the best way to develop pedagogical strategies to promote a culturally responsive pedagogy.

The consideration of multicultural awareness and inclusion in the conceptualization of the ILL are tools to achieve the competencies to live together in a democratic culture as it is stated by the Council of Europe. Within this framework of competencies for living together as equals, a cluster of “values”, “attitudes”, “skills”, and “knowledge and critical understanding” must be developed as follows.

The 20 competences included in the model

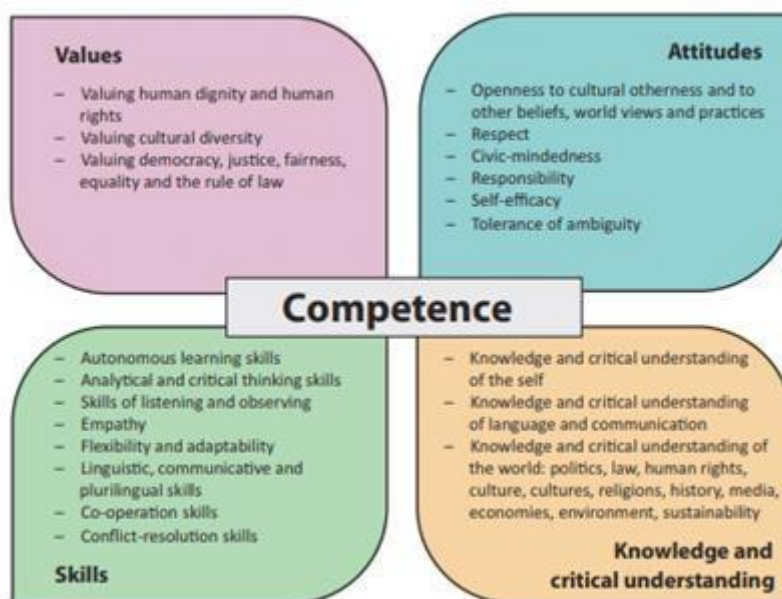


Figure 4: Competences for Democratic Culture. Living together as equals in culturally diverse democratic societies (Council of Europe (2016) <https://rm.coe.int/16806ccc07>)

Besides, E³UDRES² is closely related to **the objectives of sustainable development**: 4. "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all and in particular the following targets":

4.3. "By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university."

As mentioned, the E³UDRES² project is open to all students and any stakeholders, regardless of their preconditions. This is what can be called a project without barriers and open to both internal and external communities and to higher education institutions.

4.4. "By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship".

E³UDRES² intends to promote all students' skills that help them to be more successful in and after academic life. Some of the competencies indicated as precursors by the OECD (2018) are cognitive and metacognitive skills (e.g.: critical thinking, creative thinking, learning to learn and self-regulation); social and emotional skills (e.g.: empathy, self-efficacy and collaboration); and practical skills (e.g.: using new information and communication technology devices) which are consistent with the ILL learning outcomes (in annex 2).

4.5. "By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations".

E³UDRES², as an institutional project with no added costs for students, promotes equity in learning opportunities, promoting the development of the educational community.

4.7. "By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and culture's contribution to sustainable development".

E³UDRES², in addition to proposing to work with students' methodologies that promote critical and creative thinking in an innovative approach, focuses on three global areas with importance today: health and well-being, circular economy and human contribution to artificial intelligence. In sum, besides the SDG4, in WP3 - E³UDRES² other SDGs are developed.

2.2.2 Transdisciplinary and design thinking as lecturers – from teacher to design thinker and coach

Since the 1990s, there have been several changes in education system throughout Europe. The main changes touched upon turning theoretical approach to more practical approach. Teaching has experienced a lot of various popular materials and tools, starting from well-developed textbooks with changing cases with each new edition, ending in integrated onsite visits and internships in local and global companies.

All these have slowly changed the role of the teacher as well – a clear shift can be observed from the academic style pedagogy to the coacher and process manager.

Competence-oriented teaching and learning works especially well in environments structured according to socio-constructivist principles which are based on didactic models that go beyond pure factual knowledge and problem solving and permeate the field of creative self-developed and self-determined innovation. Learning in such an empowering way can be supported through specific teaching strategies geared towards competence-oriented learning. Broadly speaking, as Baumgartner believes it is possible to differentiate between three different teaching strategies (Baumgartner, 2004).

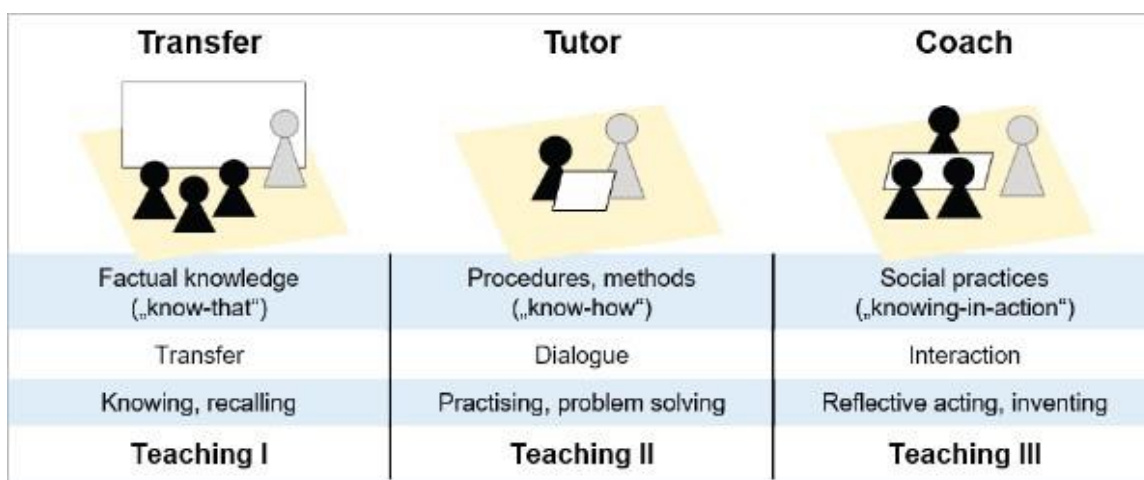


Figure 5. Teaching strategies (Ehlers, 2010, illustration according to Baumgartner, 2004)

Teaching mode 1 (transfer) is a mode of teaching where students are told what they need to know by teachers. It is the model of the omniscient teacher. Learning takes place in this mode as memorising and recalling. Much takes place in a process of imparting and it is mostly about factual knowledge represented through the knowledge dimension.

Teaching mode 2 (tutor) goes beyond the domain of knowledge transfer into problem solving. The typical learning scenario for this is problem-based learning in which students are presented with problem cases that they want to solve independently as case studies or problem-solving projects in dialogue with the teacher at eye level. The teacher changes her/his role from a sage on the stage to a guide by the side, to become a companion, an expert at eye level with the student and/or a dialogue partner in a partnership. The learning activity is transformed into practising the procedures of problem solving, of making procedures known,

of procedural knowledge, of know-how, whereby the process of teaching can be described as a dialogical process.

Teaching mode 3 (coaching or social constructivist) is a model where focus is on practising and rehearsing social practices. Teachers no longer have the role of imparting factual knowledge or presenting problems, but rather of guiding students to find and define their own problems to solve and / or generating learners' own undertakings which are then brought into a project work and solving space. ***It's all about realistic interaction between partners – about learners interacting with other learners, students networking, connecting with experts and other participants and resources.*** There is also a growing attitude of respect and self-responsibility towards the learner, acting on the belief that learning is a self-determined process in which teaching is only a supporting contextual framework condition (Ehlers, 2020).

Especially Living Labs (ILL) are the type of education where coaching approach is very appropriate and suitable. Each ILL incorporates the following innovation development phases like:

- **Exploration:** getting to know the current state and designing possible future states.
- **Experimentation:** real-life testing of one or more proposed future states.
- **Evaluation:** assessing the impact of the experiment regarding the current state in order to iterate the future states (U4IoT, 2019).



Figure 6: Phases of Innovation Processes (U4IoT, 2019)

Method design thinking presented during Training of Educational Entrepreneurs is perfect for obtaining skills in process guiding of students through **empathizing, defining, ideating and finalizing with prototyping and testing** to achieve a result that suits stakeholders' needs.

Design Thinking process seeks to generate a number of possible solutions and utilises various techniques or mechanisms that encourage participants to think outside the box in the pursuit of creative or innovative solutions. Extended Design Thinking module includes 7 stages: define – research – ideate – prototype – select – implement - learn (feedback). Although the learning stage appears to be the last of the seven, it occurs throughout the design process. The ability to learn from each stage enhances the development of design thinking and helps to generate radical and successful designs (Ambrose, Harris, 2010).

If looking at student groups of ILLs, the concept of transdisciplinary can give a helping hand to the teacher, because teams will have different education and cultural background, therefore co-creation can happen more easily and can lead to a synergy process and more advanced results. During the education process of EE, especially the Game, it became obvious that people were able to complement each other, and support necessary ideas and skills.

2.2.3 Future skills and learning outcomes

Future Skills enable university graduates to master those challenges of the future which cannot be predicted; however, they should be prepared to meet them. Ehlers declares *“To deal with future challenges, students must develop curiosity, imagination, vision, resilience and self-confidence, as well as the ability to act in a self-organized way”* (Ehlers, 2020). One core value of these skills is the open-mindedness towards others, respecting each other, even if those views might be significantly different. During their personal development they need to be prepared to experience failure or misunderstanding and manage those issues in a prospective manner.

In the ILLs, future skills need to be addressed in several ways. First, those educational entrepreneurs who lead and organize a lab must be aware of the fact that they do not only extend knowledge but provide tools for personal growth and are responsible for the acquisition of those skills. A fine balance should be found between the professional content of the lab, and the skills to be developed during that period.

The involvement of stakeholders also facilitates this aspect. It is quite often quoted that graduates from a university program might have the proper knowledge, but lack some of those skills which are necessary to achieve further progress in their workplace. So, stakeholders should also be interviewed about which skills are usually proved to be essential in a given field.

Future skills are not only the fruits of collaborative work in an ILL but they also belong to the learning outcomes. Especially those issues might be challenging when a higher educational institute evaluates an ILL module as a part of their curriculum. In that case, the learning goals should involve both professional goals (related to the scope of the ILL) and competence or skill specific goals. The most relevant future skills are presented on the figure below.



Figure 7: A Graphical Summary of Future Skills (resource: www.nextskills.org)

Future Skills can be defined using a three-focal approach (ESDE, 2018) :

1. What **skills** will **people need** in the future to shape their world and environment as citizens **in an increasing globalised context**? What **skills** do **employees need** in order **to cope with** the constant development and constant adaptation to **new situations in organisations and working life**?
2. How can **organisations help their staff to acquire these skills** and what organisational forms and structures are needed to develop the optimal organisational cultures for this?
3. What can **higher education institutions do to promote these skills** among students? How should studies and teaching be re-structured, and which forms of higher education didactics and learning designs are suitable?

For the I Living Labs, learning outcomes are defined based on future skills as follows:

- Design thinking: I am able to apply design thinking methods in order to use concrete methods to carry out creative development processes.
- Innovation: I can develop several ideas and opportunities to create value, including better solutions to existing and new challenges. I can explore and experiment with innovative approaches. I can combine knowledge and resources to achieve valuable effects.
- Communication: I am able to adapt the improvements and adapt the discourse, dialogue and strategic communication aspects. I can inspire, persuade and communicate effectively. I can use media effectively.
- Cooperation: I can develop their ability and disposition to cooperate and collaborate in intercultural teams and interactions within or between organizations.
- Self-determination: I am able to overcome external difficulties and deliver the results.
- Future and design: I can develop and prove the ability to continuously improve readiness for development, to challenge and make a change around myself.
- Self-efficacy, self-competence, initiative and performance: I am able to master the tasks at hand relying on my own abilities and taking over responsibility for my decisions. I can reflect on my needs, aspirations and wants in the short, medium and long run. I can identify and assess my individual and group strengths and weaknesses.
- Reflective: I can reflect on my past decisions and quantify or measure the consequences of my actions.
- Ambiguity: I can identify ambiguity in requirements and processes and can address it.
- Ethical: I can identify relevant ethical actions and consequences and can provide relevant perspective premises.

For each learning outcome, 4 levels are designed. Learners will use these levels in the I Living Labs to reflect on their personal future skills and to decide on their personalized learning path and will work toward the level they aim for at the end of the I Living Lab.

2.2.4 Feedback and assessment in an I Living Lab

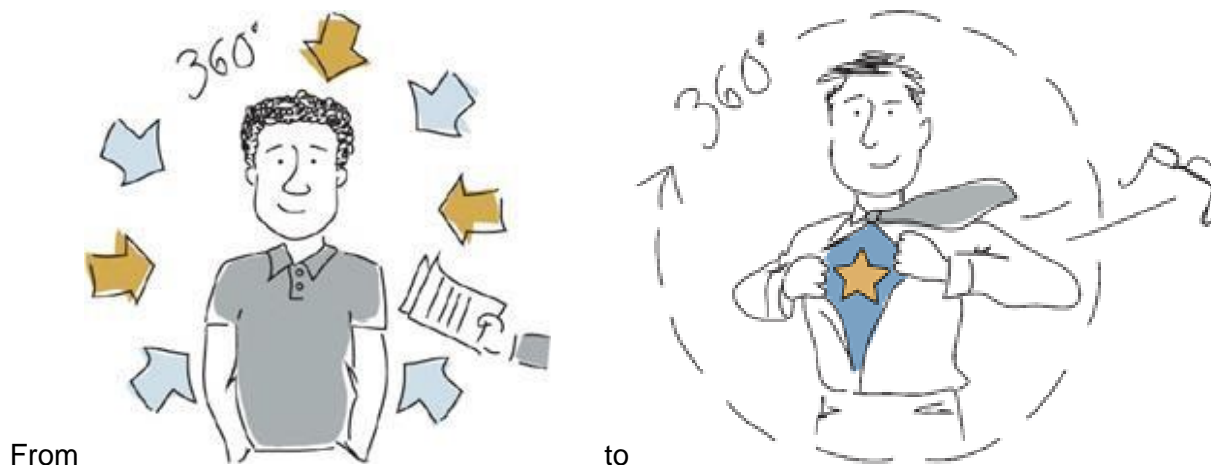
The I Living Lab is a safe working and learning space that allows learners to put ideas to test, fail and learn from failure. In doing so, they develop and sharpen their future skills and grow on a professional and personal level. Feedback and reflection play an essential role in supporting this process. Different assessment methods show the personal learning success of each student through the I Living Lab. For now, we focus on the students as learners. During E³UDRES² project, all EEs and external stakeholders will also be addressed as learners.



Giving and Receiving Feedback

360-degree feedback

360-degree feedback is a type of feedback process where not just superiors but also peers and even external participants (e.g., stakeholder) evaluate learners. Therefore, I Living Lab students will receive continuous feedback from Educational Entrepreneurs (EE), coaches, judges & external stakeholder, team members & peers in different forms. Thus, they can develop themselves from a learner receiving feedback to a responsible, self-reliant, independent, adaptable I Living Lab alumni.



During I Living Lab, when are there points to give and receive feedback?

In general, learners are asked to give feedback and talk about their feelings in different situations:

- When giving presentations: The criteria for presentation are provided for them as a guideline for giving feedback.
- After each presentation they make.

For each of these situations, there are two forms of guiding the feedback: 1) with or 2) without given feedback criteria.

Feedback of external stakeholders can be integrated in various ways, e.g., through attending official presentations or also in regular lab meetings. However, learners should always be introduced and engaged in giving feedback.

How to introduce giving and receiving feedback?

At the beginning of the I Living Lab, the 360-degree feedback needs to be introduced briefly. Then learning by doing starts, that is, a moderator reflects on each presentation after it is given. The very first contact with feedback should be established after the first presentation learners perform. After the presentations of all groups, each group separately discusses the strengths

and weaknesses of all presentations and names 3 strengths and 3 weaknesses that can be improved.

Table 1: Example for Feedback Criteria used for giving feedback for team presentations (based on OAMK Labs, Finland & iLab, St. Pölten UAS).

Criteria	Definition
1. Professional knowledge base	Team can use professional terminology consistently during pitching.
2. Information seeking	Team can use different kinds of information seeking methods: interviewing and research / hard data. Information is compiled together meaningfully. Data is appropriate to the project.
3. Professional skills and activity	Team can use innovative or alternative idea for the project. Pitching is clear, convincing, engaging, passionate, honest and likeable.
4. Target of activity (client / user)	Team can define appropriate client /user. Pitching demonstrates clear connection in order to understand the user's point of view.
5. Group work skills and leadership	Pitching shows that the team has been working in a goal-orientated manner. Team can demonstrate the exploited interdisciplinary of the team.
6. Responsibility	Team can act according to the ethical principle of their professional field. Pitch demonstrates how to identify the opportunity and the sustainability of the project.
7. Current situation of the project	Short description of the current situation of the project now.

After a presentation (e.g., one day later), moderation should be started as follows:

1. The presenting group itself describes how they felt and assess their own presentation.
2. Learners give them feedback.

The moderator is expected to take responsibility for guiding the learners during feedback – e.g., no defending. It is about receiving feedback which means listening and asking questions for a better understanding. At this point, no discussion or argument develops about why presenters acted in the way they did.

Reflection

All reflection phases in the I Living Labs are based on Gibbs Reflective Cycle.

Gibbs Reflective Cycle

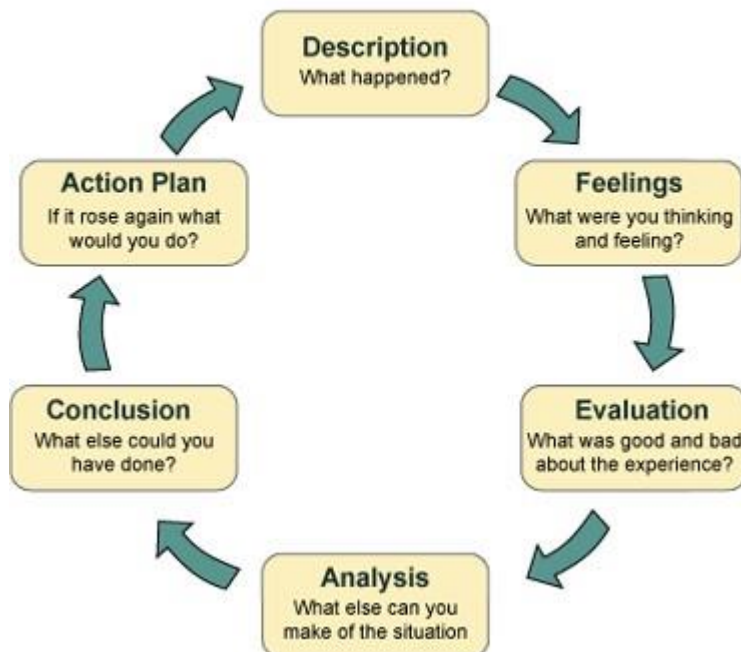


Figure 8 : gibbs-cycle.png · <https://www.crowe-associates.co.uk/coaching-tools/gibbs-reflective-cycle/> [20.08.2020]

These are the five stages in the cycle^[1]:

Description: First, ask the person you are coaching to describe the situation in detail. At this stage, you simply want to know what happened – you will draw conclusions later.

Feelings: Next, encourage them to talk about what they thought and felt during the experience. At this stage, avoid commenting on their emotions.

Evaluation: Now, you need to encourage the person you are coaching to look objectively at what approaches worked, and which ones did not.

Conclusions: Once the situation has been evaluated, you can help the person draw conclusions about what happened. Encourage them to think about the situation again using the information that have been collected so far.

Action: You should now list some possible actions that the person can take to deal with similar situations more effectively in the future. In this last stage, you need to come up with a plan to trigger the favourable changes. Once the areas they will work on have been identified, encourage them to commit to taking action, and agree on a date on which you will both review progress.

^[1] <https://www.crowe-associates.co.uk/coaching-tools/gibbs-reflective-cycle/>

Feedback and reflection are a continuous process that accompanies students in the I Living Lab. Both methods lead to the assessment.

Assessment

Assessment is a challenge as learners develop individually based on their personal goals and prior discipline knowledge. As the learners develop their skills individually, the Educational Entrepreneurs can select from various assessment tools.

Personal Goals

Each learner defines their personal learning goals for personal development. It is important to define personal goals at the beginning of the I-Living Lab. The learners need to set goals that they want to achieve for their future and therefore, develop their self-determination.

There are two key points for the personal development:

1. Reflective practice
2. Development of a learning community

Students need to start trusting one another and the Educational Entrepreneurs (EE) as coaches to find their real goals and development path.

Already in the first days, learners must be encouraged to reflect on their personal goals. Therefore, learners will set their personal goals (only a few) at the beginning and deepen them within the context of personal goal setting sessions. The goals are set together with the EE in a personal goal setting session. This creates a clear plan for the student and for the responsible EE to follow and give feedback on.

The personal goals are defined as smart goals. During the process, it is useful to check in personal goal setting sessions if the goals are still appropriate or need to be adjusted or changed.

Topics of the Personal Goals

In principle, personal goals should be linked to learning outcomes of the I-Living Lab (see 2.2.3). The alignment of personal goals includes the following topics:

- Life and professional skills
- Learning and innovation skills
- Information, media and technology skills
- Critical thinking and problem solving
- Communication
- Collaboration
- Creativity

Logbook

By keeping a logbook every week, learners learn how to reflect and why it is important. This is important for their development as reflective practitioners. Learners can choose the form of their reflection (e.g., text, drawing or video) on their own. All logbooks are open (on the communication platform used) for any learner. Learners also review other logbooks because they need to give feedback to one another.

Learners are supposed to learn from one another. Learners can decide for themselves what they share and how deep that information goes. This is also called informal learning. But in any case, what is shared here should remain in the community of the I Living Lab. It is their learning experience and the learning community that E³UDRES² project members want to improve.

Portfolio

The learners create and share their personal portfolio showing their learnings within the I Living Lab. They choose three to four areas (knowledge, skills, competences and/or attitudes) they have learned and deepened their understanding while studying in the ILL. They need to find areas whose development is important from their professional point of view. Possible choices by students: a produce or outcome they have created. To list some examples, developing a logo or content, information for their project, webpage or developing a business plan, creating an innovative product for their field or developing their skills to work in a team or developing their reflective skills, presentation skills, or learning how to give feedback.

With this portfolio it is not enough to show what they have as a final product, skill, knowledge, change of behaviour, but they must share how and why they developed things in the way they did. Learners need to think about self-evaluation and reflections, feedback they have received from others and from the clients, customers and coaches. They provide documents or parts of them to prove what they have been doing in their portfolio. As an additional task they are encouraged to think about how they intend to continue developing these areas after having finished the I Living Lab.

Presentations

Learners must pitch their solutions and prototypes and enhance the chance to obtain constructive feedback to further develop their solution or reconsider their approaches. There is feedback along a set of criteria from all involved participants and from the learners themselves.

Assessment Report and Assessment Talk

In preparation for the assessment talk, learners are expected to prepare a written assessment report. In this report, learners reflect on the defined learning goals. Based on their newly acquired competences, they make a suggestion on the grade they deserve for their performance and argue why.

During the assessment talk, students present their portfolio and argue their proposed grade in front of the responsible EEs. The decision about the grade is made based on a joint reflective discussion between the learner, the EEs as well as external stakeholders and end users in case they are different.

Conclusion

For the assessment of the I Living Lab, the authors move away from evaluating knowledge as the I Living Labs focus on developing future skills. Assessment as described above requests intrinsic motivation from the learners and self-management of the learners' own learning path. Feedback and reflection are essential parts in understanding their own responsibility for their learning. Based on this responsibility other assessment methods are made possible. However, as this learning process is new for most of the learners, EEs need be aware of and pay close attention to it.

3. Staff training

3.1 Flow for educational entrepreneurs

When Educational Entrepreneurs have started in E³UDRES², they have started in a flow that prepares them for facilitating an I Living Lab.

- Kick-off meeting with the presentation of E³UDRES² and the role of I Living Lab in connection to the region
- Training phase
 - Training modules and meetings
 - Experience-based training in I Living Lab – running an I Living Lab designed by a senior Educational Entrepreneur
- Game phase
 - Follow the different steps of the Game
 - Pitching at event
- Development phase
 - With 2-weekly meetings with other Educational Entrepreneurs; sharing ideas, building a learning community, exchanging best practices
- Facilitating phase
 - During the I Living Lab there are no meetings planned, but the Educational Entrepreneurs are coached by one of the T-Shaped Innovators
- Review phase
 - Again 2-weekly meetings, completing the PDCA-cycle. This is the Check-phase (Plan=Development Phase and Do=Facilitating). Reviewing the I Living Lab via 360° feedback from Educational Entrepreneurs, stakeholders, learners and T-Shaped Innovators and co-creating improvements for the following series of I Living Labs.
- Development phase
 - Also, act from the PDCA-cycle where Educational Entrepreneurs prepare the new series of I Living Labs.

Between I Living Labs, simultaneously with the review and development phases, Educational Entrepreneurs also receive targeted workshops, such as workshops for Design Thinking, Pitching and Coaching, to further grow in facilitating an I Living Lab.

3.2 The Game

To select the topics for an I Living Lab, all Educational Entrepreneurs participate in a Game. This Game consists of 8 steps, ranging from exploring the region in groups to developing a video pitch in pairs.

These steps can also be used to start assessing the quality of the ILL.

The 8 steps of the Game are as follows:

1. All I Living Labs focus on the needs in the given geographical region. For this reason, the starting point of the Game is a needs' analysis. Each research team is supposed to create one. If not, EEs can also create one themselves.
2. All regions have been defined within a 'more and less' pattern: more problems and less solutions. This situation definitely requires to be changed. Why do inhabitants love their region? Try to change lenses. What if you were to describe your region through the happiness index like Arden or Bhutan did? A map of why life is good in the given region should be created.

3. Findings are exchanged and discussed focusing on needs and strengths emerged in this conversation to investigate if there are any similarities between regions. It is possible that some needs in one region have already been satisfied and the same strategy can be applied in another region.
4. Three islands – *Familiar*, *Strange*, *Fantasy* – are created and insights raised during previous conversations are arranged into each island.
5. Re-grouping. Educational Entrepreneurs are organised into new groups based on thematic focus: a) Circular Economy, b) Active Ageing and Well-being, and c) human role in an AI society. Three draft challenges are formulated linking insights from *Familiar*, *Strange* and *Fantasy* islands.
6. Three teams of two are formed per theme. Team members are expected not to belong to the same country. Each sub-team creates a story pitching their challenge to the research community, to external stakeholders and to the SMEs. The development of a clip is the outcome of this step.
7. Speed date: having shared the above pitches with E³UDRES² researchers, external stakeholders and entrepreneurs, one researcher, one external stakeholder and one entrepreneur should be found who are interested in each given idea.
8. The desired future is elaborated through backcasting:

Step 1 and 2

Area for Country: St. Pieter

Things from Step 1: Needs Analysis

Things from Step 2: Map of why your country is great to live in

Area for Country: Belgium/UCLL

Things from Step 1: Needs Analysis

SALK TURBO - What can we learn from the analysis?

SALK TURBO - Priorities for a prosperous Limburg

Things from Step 2: Map of why your country is great to live in

Area for Country: Latvia VIA

Things from Step 1: Needs Analysis

Things from Step 2: Map of why your country is great to live in

Area for Country: Setúbal (Portugal) IPS

Things from Step 1: Needs Analysis

Aspect/Result	Background/Context	Political/Thematic
Geographic location of region (near major cities like Lisbon and Faro)	Setúbal region	Local development
Historical and cultural heritage (Setúbal Peninsula)	Setúbal Peninsula	Cultural Heritage
Natural resources (salt, cork, wine)	Natural resources	Local Development
Industrial sector (cork, wine)	Industrial sector	Local Development
Urban sprawl and population growth	Urban sprawl and population growth	Local Development
Transportation infrastructure (highway, train)	Transportation infrastructure	Local Development
Quality of life (climate, landscape)	Quality of life	Local Development

Things from Step 2: Map of why your country is great to live in

Area for Country: Goidits, Hungary

Things from Step 1: Needs Analysis

- Being healthy and active in the morning...
- Need for education by specialization...
- Need for a common urban vision...
- Need for help in management of local food products...
- Being close to the capital...
- Need for a better urban and network plan...
- Need for a better urban and network plan...

Things from Step 2: Map of why your country is great to live in

- Pleasant environment, landscapes, sights...
- Active cultural life...
- Opportunities for outstanding agricultural production...
- Job opportunities...
- Feasibility of field projects regarding agro-focused ILLs...
- Heterogeneous infrastructure - an opportunity for development...

Area for Country: Timisoara, RO

Things from Step 1: Needs Analysis

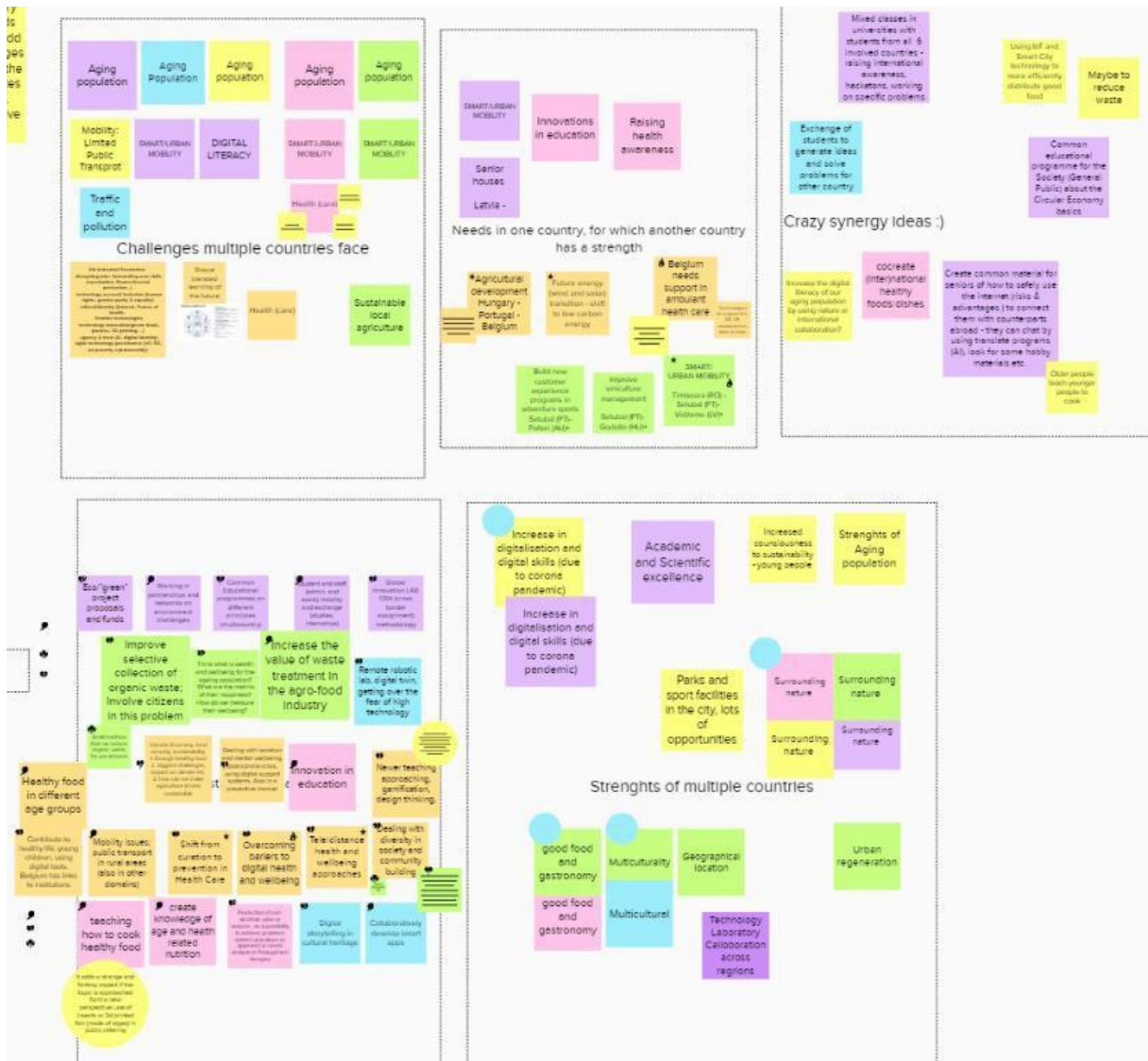
Problems specific to medium-sized, economically stable Central European cities

- insufficiently developed international profile
- intolerance towards the marginal groups
- passive state of comfort
- decrease of the civic interest
- rejection of the new
- lack of a common urban vision
- high prices of apartments
- old unmaintained buildings
- loss of the public space
- traffic and pollution
- lack of parking spaces

Things from Step 2: Map of why your country is great to live in

Timisoara - the "city of roses"

- Timisoara - multicultural city
- Timisoara - European promises
- Timisoara - IT Hub, student center
- Timisoara - connected to Europe



The first four steps of the game went according to the plan. However, in step 5 and 6 pairs emerged rather organically based on a shared interest in specific topics. In the first round of the I Living Labs, pairs emerged with a similar background which is not conducive for a transdisciplinary approach. In T-shaped meetings, a discussion with EEs has been suggested about this challenge.

By the beginning of September, the pairs had made their video pitch and afterwards started to design the first round of I Living Labs. The pitches were presented in the first transnational event via Wonder.Me platform.

The purpose of this event was to share and present the I Living Labs, best practices and ideas. As one of the main aims of E³UDRES² is to build a sustainable network, there was no competition between I Living Labs involved, but rather reinforcement of learning from each other.

Wonder.Me was found the most appropriate platform for organising the event, as it meets the requirements of an informal event and enables fast movement between different groups.



Figure x: print screen of Wonder.me session

As seen on the print screen taken during the event, each I Living Lab possessed a virtual table which other participants could join to watch and listen to the video pitch and get engaged in a short Q&A session with the Educational Entrepreneurs leading the given I Living Lab.

After each 20 minutes session, participants could swap to another table so that everybody was able to participate in four pitches and Q&A sessions.

All Educational Entrepreneurs and T-Shaped Innovators were present. Everybody involved in other work packages from E³UDRES² got invited as well as local partners from the different institutions.

Afterwards Educational Entrepreneurs were satisfied with the useful tips and critical questions raised by participants. The attendees were provided a comprehensive overview of the first round of I Living Labs. However, more information about learners was expected. The approach in the I Living Labs differs sometimes. For instance, when to involve the external stakeholder - from the beginning or only at a later stage of the implementation of the I Living Labs).

The event was successful as a relatively short informal event. In the future, the same arrangement can hopefully take place in real life context.

Some critical reflections:

- more external stakeholders and students should be involved as participants.
- need to follow up on diversity in I Living Labs and results of different approaches

3.3 The training

3.3.1 Concept and modules

For the concept of the training, the T-Shaped Innovators started from the methodology of a flipped classroom. Each module has its own informative slides with reading materials, clips, exercises and self-reflection exercises which educational entrepreneurs study in their own time before attending the online training sessions. Depending on the subject of the training, the meetings focussed on self-reflection, role-play, peer-coaching, etc., so we also show the educational entrepreneurs a mix of tools they can incorporate into their I Living Lab.

The T-Shaped Innovators choose to work thematically in modules, providing tools and general knowledge.

3.3.2 Session plans of the different modules

For each module, the T-Shaped Innovators made a fact sheet with key facts about the training as well as a session plan with more detailed information (only available for the trainers). These detailed sessions plans and factsheet can be found in annex 1

3.3.3 Evaluation of the first training

A survey was conducted in June 2021 at the end of the first training for Educational Entrepreneurs. The goal was to evaluate the training and to use the feedback obtained to improve the quality of the training for the next batch of Educational Entrepreneurs.

The response rate was 38.8% with 7 completed evaluation forms (n=18). 42,9% of the participants reported that the training met their expectations. All others responded Neutral.

The participants hope to acquire theoretical and practical skills required to run I Living Labs. They expect to receive more direct information regarding the concept of an I Living Lab and more detailed information to attain the objectives of this new educational concept.

Overall comments regarding the training are:

“ Too much autonomous time, with insufficient time to discuss with the big group (or even smaller groups), at least regarding the different assignments proposed in each module. Subsequently, insufficient time to reflect about each module, also because we had three modules in each fifteen days (too much information in such a short time!). Nevertheless, a good repository of information for later use. Finally, I was also expecting a more practical training, as if I were role playing as a student/facilitator in an ILL.”

“ I would highly appreciate if we could do a little ILL ourselves”

“ Should be more hands-on , and with less contents per class.”

“ Very theoretical and I expected more detailed information”

“ I guess a bit longer training time together could be really useful”

“ The modules should have been done in different weeks, instead to do three in a week”

“More time between synchronous sessions, less autonomous time and more "learning by doing" with role plays, small exercises, real case demonstrations, among others. Nevertheless, congratulations for the huge effort and not bad for a first training launched from scratch”

4 out of 7 participants gave the training a score of 5/10 (with 10/10 being the maximum score). The others gave a higher score (2 participants gave the training a score of 8/10)

Module 1: Concept of I Living Lab

More than 50% of the participants agree that this module improved their understanding of the I Living Lab concept and the importance of co-creation and transdisciplinary education.

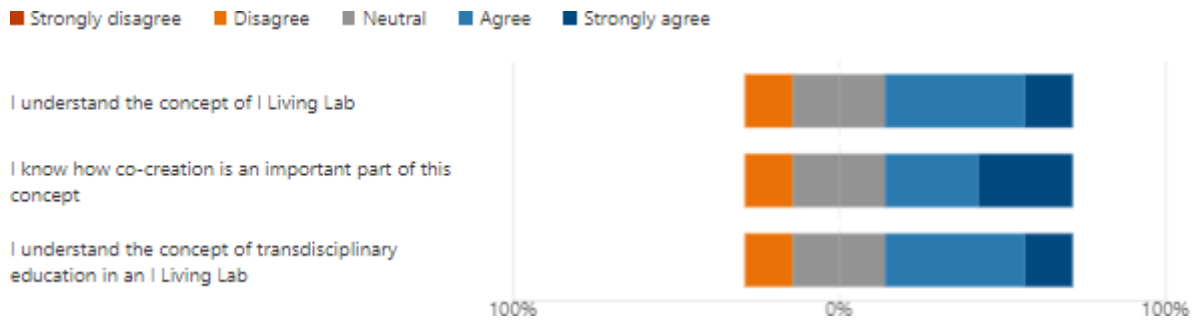
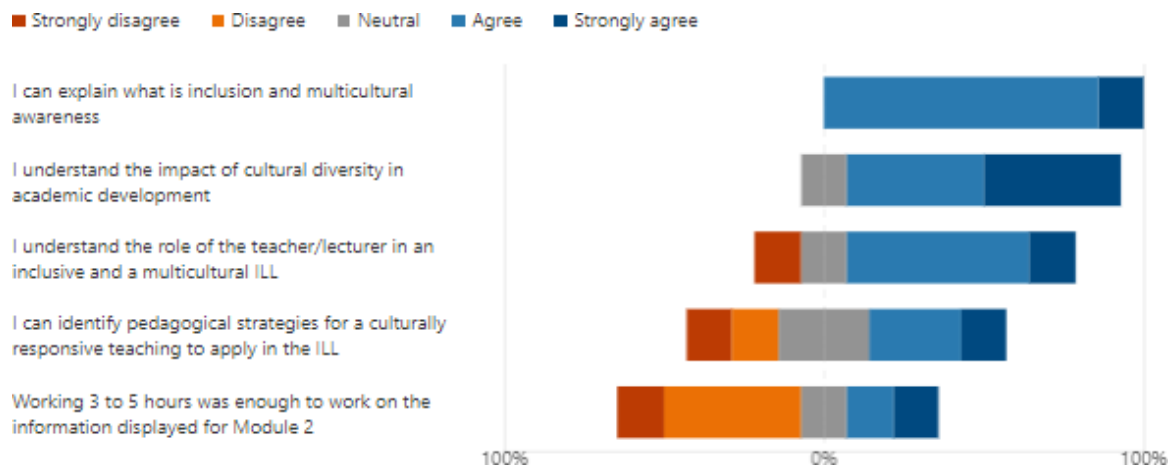


Figure 1: results questions module 1

Participants suggest using own materials to illustrate the points made, (potentially future E³UDRES² materials), instead of material from other institutions.

Module 2: Inclusion and multicultural awareness

The participants overall agree with the first 3 statements. 1 participant does not understand the role of the teacher/lecturer in an inclusive and a multicultural ILL, and 2 participants struggle to identify pedagogical strategies for culturally responsive teaching in an ILL.

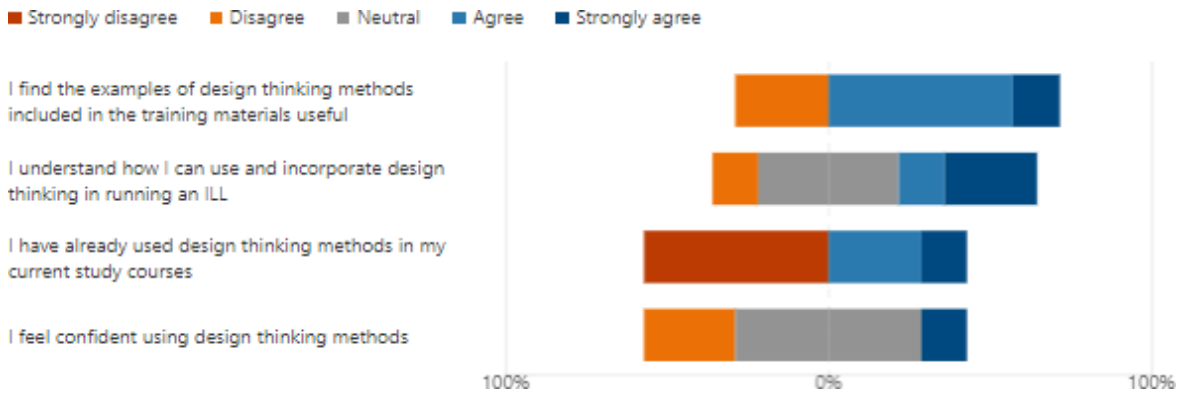


Interestingly, one of the participants suggests incorporating a roleplay in the training (between EE acting as students from different nationalities, origins, or backgrounds, and the ILL facilitator, also an EE).

Module 3: method of design thinking

4 out of 7 participants had never used design thinking in previous study courses.

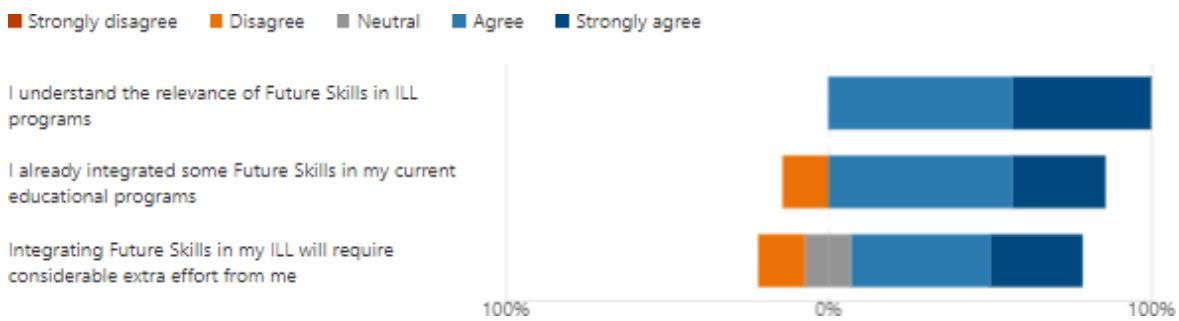
5 out of 7 participants find the examples in the training helpful. 42% of the participants understand how to incorporate design thinking into an ILL, whereas most of the participants do not feel confident using design thinking methods.



Participants suggest having more hands-on information in the shape of an exercise. Furthermore, it is mentioned that a lot of information is given so it could be interesting to discuss everything in smaller (theme) groups first, in order to have the possibility to train how to work together.

Module 4: Future skills

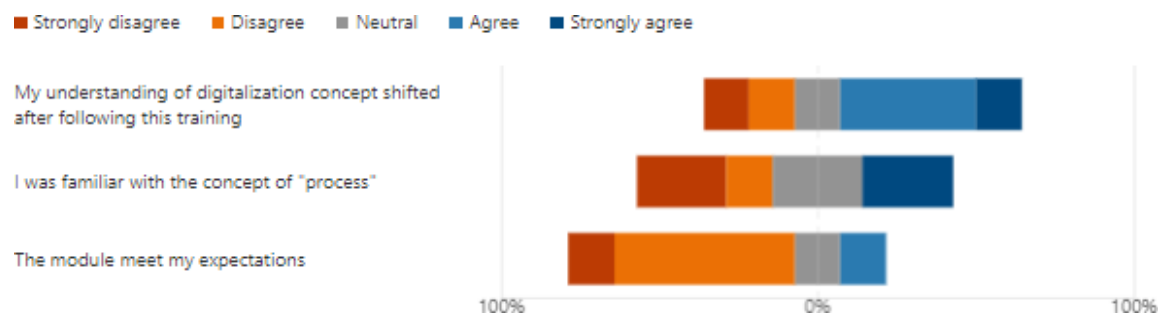
All participants understand the relevance of Future Skills in ILL, and the majority (6 out of 7) have already integrated some Future Skills in their current educational programs. 2 participants are worried about the additional efforts that will be required when integrating Future Skills in an ILL.



Additional suggestions made by the participants were that we should define a set of future skills we will be working on in ILL. Some participants pointed out the need for more practical examples on how to develop these skills and the need for more visual material (videos) for teachers and about entrepreneurial universities.

Module 5: Digital skills

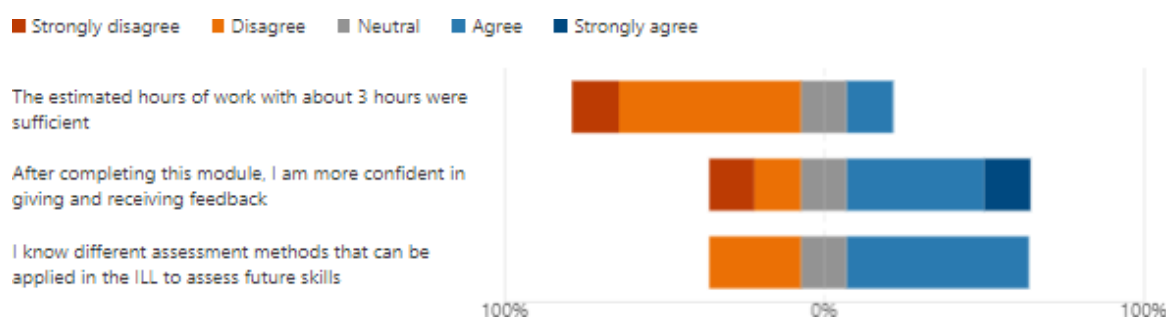
56% of the participants say their understanding of digitalization shifted after the training. 71% say this module did not meet their expectations.



Participants have mixed suggestions. Some particularly like this module, others say that it was too difficult without sufficient background in software engineering. There is the suggestion to split the content in separate modules: digital tools for ILL and how to develop digital tools (the process), as the second part is not relevant for all participants. The question is, knowing we provide transdisciplinary education, which knowledge is common to each participant (educational entrepreneurs and students)

Module 6: Giving feedback – assessment

Most of the participants needed more than 3 hours to prepare for this training. 2 participants feel more confident giving and receiving feedback after the training. They also know the different assessment methods better.



Participants suggest we spend more time on the different assessment methods. In addition, they would like further readings/videos on the matter. An activity with a case study with practical examples could be useful.

This feedback provides us with valuable insights. Not only regarding the training in itself, but also regarding the future skills of the educational entrepreneurs. Some of the educational entrepreneurs ask for more theoretical information, more details, etc. and feel uncomfortable in the unknown role of the coach/facilitator of an I Living Lab. The Erasmus+ Programme *Learning to Learn by Teaching 2* describes in their Adult Learning Book similar observations and describes this as a contradiction: resistance and transition in teachers as learners. So, the biggest challenge seems not to be the coping mechanisms of learners into the unknown, but the journey of both the educational entrepreneurs into the unknown and the unfamiliar role of facilitator as well as the T-Shaped innovators into designers and facilitators of the I Living Lab for educators of the future. Further research is needed how to reach this goal.

4. Work in progress

4.1 Meetings

4.1.1 Meeting minutes of the T-shaped Innovators – Holiday Makers

- 17 September 2021
- 3 September 2021
- 11 June 2021
- 28 May 2021
- 30 April 2021

4.1.2 Meeting minutes of the Workers

- 21 September 2021
- 7 September 2021
- 15 June 2021
- 1 June 2021
- 25 May 2021
- 18 May 2021
- 11 May 2021
- 20 April 2021

4.1.3 Meeting minutes of the Educational Entrepreneurs

- 24 September 2021
- 10 September 2021
- 18 June 2021 – Training 2 – no meeting minutes
- 4 June 2021 – Training 1 – no meeting minutes
- 21 May 2021 – The Game
- 7 May 2021 – The Game
- 23 April 2021 – Kick-Off

4.2 Calendar 2021-2022

Planning 21-22

3/09/21	start 2 weekly meeting T-SI
7/9/21	start 2 weekly meeting workers
10/9/21	start 2 weekly meeting EE: kick-off 21-22
15/09/21	Report EU ready? And publishing new, adapted, training modules?
17/09/21	2 weekly meeting T-SI
21/09/21	Workers meeting
24/09/21	2 weekly meeting EE: old EE - developing ILL
1/10/21	2 weekly meeting T-SI Meeting EE: Training Day 1 for the 2 nd group EE
5/10/21	Workers meeting
8/10/21	2 weekly meeting EE: old EE - developing ILL
15/10/21	2 weekly meeting T-SI Meeting EE: Training Day 2 for the 2 nd group EE
19/10/21	Workers meeting
22/10/21	2 weekly meeting EE: old EE - developing ILL
29/10/21	2 weekly meeting T-SI

Week Autumn Holiday (30/10 – 7/11)

During this week the new EE's prepare the ILL.

8/11/21	Start ILL
12/11/21	2 weekly meeting T-SI meeting
16/11/21	Workers meeting
19/11/21	2 weekly meeting EE: new EE: welcome + explanation concept? Or start GAME?
26/11/21	2 weekly meeting T-SI meeting
30/11/21	Workers meeting
3/12/21	2 weekly meeting EE: new EE: game or training?
10/12/21	2 weekly meeting T-SI meeting
14/12/21	Workers meeting

17/12/21 2 weekly meeting EE: new EE: game or training?
 23/12/21 End of ILL

2 Week of Holiday (Christmas – New Year)

11/1/22 Workers meeting
 14/1/22 2 weekly meeting EE: review past ILL + welcome new EE
 24/1/22 2 weekly meeting T-SI meeting
 25/1/22 Workers meeting
 28/1/22 2 weekly meeting EE
 4/2/22 2 weekly meeting T-SI meeting
 8/2/22 Workers meeting
 11/2/22 2 weekly meeting EE for the 1st and 2nd group
 EE meeting: Training Day 1 for the 3rd group EE
 18/2/22 2 weekly meeting T-SI meeting
 EE meeting: Training Day 2 for the 3rd group EE
 22/2/22 Workers meeting
 25/2/22 2 weekly meeting EE
 4/3/22 2 weekly meeting T-SI meeting
 7/3/22 Start ILL
 8/3/22 Workers meeting
 18/3/22 2 weekly meeting T-SI meeting
 22/3/22 Workers meeting
 1/4/22 2 weekly meeting T-SI meeting

5. From here to where: conclusion so far

The Educator's I Living Lab as practice-based, citizen science, design research

After one year, E3UDRES2 is running 18 I Living Labs of 6 ects run by teacher teams of two partners, involving students from six countries *and* external stakeholders.

These external stakeholders collaborate throughout the whole process of the I living lab starting from the very beginning of the problem definition as challenge owner to implementer and evaluator (Hakley, 2013)

The development of the I Living lab is a research process combining thought, creativity and intuition to gather, apply and analyse data in a systemic way to generate new knowledge (Migchelbrink, 2008).

There are several practice-based research approaches that teachers as researchers can engage in. In E3UDRES2 we have opted for design research as we introduce a new approach/content, method based on preliminary research defining the principles of the innovation: the I living lab.

Finding out which features need definition is discovered though the meetings and the trainings. So far, we have discussed the principles of an I living lab, multicultural awareness, transdisciplinarity, design thinking, flipped classroom, future skills and learning outcomes, feedback and assessment.

The theoretical framework will be updated through ongoing feedback both from external stakeholders as well as learners and facilitators. For instance, through current debates about running the I living labs the balance between information-based, experience-based and personalized learning has become a point of interest.

There are five levels of intervention:

- the individual teaching practice,
- the curriculum,
- the institute,
- the educational environment,
- the educator's profession (Van der Donk e.a., 2010).

As to the first level, the questioning and developing attitude is linked to the teacher as a reflective practitioner which is the 7th professional competence for teachers (Kallenberg e.a., 2007). This reflective practitioner continuously seeks to improve his/her practice, collaborates with the learning community, questions self-evident approaches and looks for new solutions We have linked this to the profiles of educational entrepreneur (EE) and T-shaped innovator (T-SI). Although every partner has started this quest for EEs and T-SIs immediately, it is still a big challenge to motivate colleagues to move into this new role of reflective practitioner. This has led to an almost complete absence of the UPT-partner so far.

It is the ambition of E3UDRES2 to include the ILL as a fixed part of the curriculum and to create a multi-campus where learners can tailor-made their learning trajectory registering for their ILLs in the different HEIs of the consortium. This proved to be impossible due to national

legislation. So, we opted for elective courses that run simultaneously in all partner's institutes and learners remain registered in their mother institute.

The intervention at the institutes' level necessitated a European University Alliance of different paces as some partners have been able to communicate and find support university-wide, whereas others are still seeking ways to connect.

Furthermore, the educational environment has changed drastically through the I Living Labs collaborating thoroughly and working for the region. The pitching sessions that we organized in Wonder.me has initiated this change process. This will be enhanced by new initiatives to link the hackathons to the I Living Labs.

Finally, the educator's profession is being redesigned. In the I Living labs for the educators of the future that we call training sessions up till now, the EEs translate the theoretical concepts in a learning practice of change agents for smart and sustainable regions. But will they step up and take up a redesigning challenge innovating, expanding the theoretical frameworks?

Are we -as educators -all-round specialists able to research, conceptualise, innovate, organize, facilitate, network? Or will there be a movement towards different types of educators? Currently, there is a tendency towards this last option as we have subdivided all tasks in two sub-categories, but will this be our final choice?

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7. Annexes

1. Training modules: factsheet and session plan
 - a. Concept op I Living Lab
 - b. Inclusion and multicultural awareness
 - c. Method of design thinking
 - d. Future skills
 - e. Digital skills
 - f. Feedback and assessment
2. Studyguide
3. Meeting Minutes
 - a. Meeting Minutes T-shaped innovators
 - b. Meeting Minutes Educational Entrepreneurs

Annex 1: Training modules: factsheet and session plan

Training module 1: concept of I Living Lab

Fact sheet

Background

In order for educational entrepreneurs to get a clear picture of what an I Living Lab should look like and how it should be structured, it is important that they gain insight into the objective of the E³UDRES² project as a whole and the concept of the I Living Labs in general. This module is the first step in the training and must be seen as the basis on which the following modules expand so as to shape and set the basics for the modules to further deepen the educational entrepreneurs' understanding of the concept.

In this first module, the educational entrepreneurs gain insight into the objectives of the E³UDRES² project and the I Living Labs in which they will participate. When the goals are clear, the educational entrepreneurs map out their own situation through self-reflection and define where their personal learning goals lie.

Study materials

- Slide deck with embedded video materials and assignments
- Additional reading materials

Instructions

- The educational entrepreneurs process the materials in their own time
- They do assignments based on specific questions
- They formulate personal learning goals in a SMART way
- In groups, the educational entrepreneurs discuss questions, comments, etc.

Objectives

- What are the objectives of the E³UDRES² project?
- What is an I Living Lab?
- What are important components of such an I Living Lab?
- What is co-creation?
- What is transdisciplinary?
- How do I see myself as a lecturer or teacher?
- What skills are expected from an educational entrepreneur?
- Where do I still need to grow?
- How do I formulate good SMART learning goals?

Workload

- Processing slide deck: 120 minutes
- Discussion: 45 minutes

Methodology

- Low-threshold, English-language (or subtitled) short videos provide the educational entrepreneurs with information about the objectives of the E³UDRES² project and the I Living Labs
- Based on logical levels by Dilts and Bateson (reflection tool), the educational entrepreneur is guided through the self-reflection process
- After this reflection, the educational entrepreneurs formulate SMART learning goals for themselves.
- In a group discussion, we go deeper into the assignment and exchange findings. For this group discussion, we aim at groups of around a maximum of 10 participants to ensure that everybody engages in the discussion.

- Start by looking at Mentimeter and present yourself in one word.
- Engage in the discussion and reflect:
 1. How did you find the assignment?
 2. What was easy for you?
 3. What was challenging for you?
 4. How can you tackle these challenges?
 5. What do you need to tackle these challenges?

The chosen method has 2 goals. On the one hand, it should provide the educational entrepreneurs with information about E³UDRES² and the concept of the I Living Lab. On the other hand, it is an exercise in self-reflection and drawing up SMART learning goals. The latter is part of the I Living Lab, so by tackling it in this way we allow the educational entrepreneurs to take steps in experience-based learning.

In the group discussion we, as T-shaped innovators and trainers, step into the role of a coach. We do not offer solutions to questions but try to stimulate entrepreneurial thinking by asking open questions and connecting the educational entrepreneurs.



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Engaged University:

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I Living labs:

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Best practices

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Interesting reading materials

The European Network of Living Labs (ENoLL): [https://digital-](https://digital-strategy.ec.europa.eu/en/news/european-network-living-labs-enoll-explained)

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E³UDRES² fact sheet: <https://ec.europa.eu/education/sites/default/files/document-library-docs/european-universities-factsheet-e3udres2.pdf>



Pilot I- Living Lab

[4 June 2021]

Subject	Objectives ¹	Materials Required	
<p>Concept of I Living Lab</p> <p>Prepared By</p>	<ul style="list-style-type: none"> - Find out more about the E³UDRES² project - Learn more about the I Living Lab concept - Reflect on personal skills required to run an I Living Lab - Learn how to set personal learning goals based on reflection 	<ul style="list-style-type: none"> - Slide deck with embedded video materials and assignments - Fact sheet - Writing materials and internet connection for Mentimeter 	
Session Plan	Time	Additional Resources	
Introduction	Presentation of the session and methods used.	2-3 min	- Suggestions included in the slide deck
Information	Ask participants to fill in the Mentimeter <ul style="list-style-type: none"> - Describe yourself in 1 word - Share your takeaways from the pre-assignment in 3 words 	2-3 min	Additional Notes This module deals with the I Living Lab concept and is divided into 3 specific sections: 1) Introduction to E ³ UDRES ² ; 2) General components in an I Living Lab: Co-creation and Transdisciplinarity ; 3) Good Practices
Feedback	Ask the participants if all information was clear	5-7 min	It is planned to be completed in 3 (basic level) to 5 hours (advanced level), including both asynchronous pre-assignment and participation in the one-hour synchronous session.
Tasks	Divide participants into 2 groups if there are more than 12 participants. The group discussion focuses on the final assignment in the slide deck: Look at the Mentimeter and share in the group: <ul style="list-style-type: none"> - What do you want to know or learn more about prior to running an I Living Lab? - What do you expect to learn during this training? 	30 min	Discussion: 60 minutes (synchronous session on 4 June 2021)
Summary	Short summary by facilitator and thanking participants for joining.	5 min	

Training module 2: Multicultural awareness

Fact sheet

Background

E³UDRES² is an international and multicultural project, so the awareness of our own cultural identities, as well as the knowledge of our partners' cultures must be introduced in the goals of our network. Multicultural awareness will deepen higher education's future skills, aiming at citizenship participation in a democratic culture.

Differently from having a specific subject on different cultures, the I-living labs may have pedagogical strategies enhancing curiosity about our cultural diversity and trust towards different beliefs, values, ways of thinking. Some training examples may be adapted from the proposals of Plurilingual and pluricultural awareness in language teacher education (Bernaus, Andrade, Kervran, Murkowska, and Saez, 2008), a European project on this matter. Although this tool kit for E³UDRES² teacher training was meant to be used in language education, some activities may be adapted to E³UDRES² students and teachers (for example, to enhance social and communicative skills through presentations on each other cultural lives).

Being an educational goal, multicultural awareness is related to social and emotional skills involved in Sustainable Development Goals, included in this training module.

The goal of this module is that educational entrepreneurs increase their understanding and appreciation of one's own culture and background and improve culturally responsive teaching skills in order to develop them in the I Living Labs. When the goals are clear, the educational entrepreneurs map out their current own situation through self-reflection and define where their personal learning goals lie.

Study materials

- Slide deck with embedded video materials and assignments
- Additional reading materials

Instructions

- The educational entrepreneurs process the materials in their own time.
- They do assignments based on specific questions.
- They formulate personal learning goals about this topic.
- In groups, the educational entrepreneurs discuss questions, comments, etc.

Objectives (adapted from Sandell & Tuoy, 2015)

- Increase understanding and appreciation of your own culture and experience.
- Identify and reflect on personal characteristics, qualities and experiences with diversity and culture.
- Reflect on personal pre-judgments about other people's characteristics.
- Understand the value and principles of multicultural education.
- Practice positive and respectful communication.
- Develop plans to fight discrimination.
- Improve academic writing skills.

Workload

- This module is about inclusion and multicultural awareness and is divided in 3 specific topics: 1) Cultural competences in Europe and in relation with Sustainable Development Goals; 2) Key concepts: culturally responsive teaching/ curriculum; 3) Strategies for culturally responsive teaching.
- Planned to be completed in 3 (basic level) to 5 hours (advanced level), with asynchronous work and one synchronous session.
- Discussion: 60 minutes (synchronous session on 4th of June 2021)

Methodology

- Follow the presentation that includes reading tips, activities, and reflections.
- Low-threshold, English-language (or subtitled) short videos provide the educational entrepreneurs with information about inclusion and multicultural awareness.
- Clicking on the images of the documents or the links will take you to the original document, learn about some culturally responsive teaching strategies and answer the questions on slide 27. Please take notes them for sharing in the synchronous session.
- On slides 28-33 you can find good practices, articles and books on the subject. Choose one topic that you consider interesting to be shared and discussed in the synchronous session, where you can present it on 1 slide.
- Please access the mentimeter with the QR code or link on slide 4 and respond to the suggested activity. The results of this activity will be analysed, globally, in the synchronous session.
- On slide 5, please click on the image of the form or access it via the link <https://docs.google.com/forms/d/e/1FAIpQLSftqRuBo6fdPfrCcBzxSHjiAvE8Rm8mlavvCOcLvswmxS5Kvw/viewform> and answer to it according to your current experience.
- Read the summary of the documents presented on slide 8 to be found on slides 9-12 and identify the 3 main ideas that relate democratic culture to cultural competence. For deeper understanding of the subject, it is suggested to read the full documents.
- On slide 13, the sustainable development objectives (SDG) that are most articulated with the project of European universities are presented. Identify the 3 main ideas that link SDGs to cultural competences.
- Slides 15-22 cover the main concepts that are related to inclusion and multicultural awareness. Take some notes, for discussion in the synchronous session, about your understanding of culturally responsive pedagogy. Based on your experience, give 1 example of a culturally competent strategy that you already use or could use in a course you teach or at your institution.
- Answer to the questions that are on slide 23, whose answers will be discussed in the synchronous session.
- Learn about some culturally responsive teaching strategies and answer the questions on slide 27. Please take notes about them for sharing in the synchronous session, please.
- *[To discover now or when you have some time]* On slides 28-33 you can find good practices, articles and books on the subject. Choose a topic that you consider interesting to be shared and discussed in the synchronous session, where you can present it on 1 slide.
- In a group discussion, we go deeper into the assignment and exchange findings. For this group discussion, we aim at groups of around a maximum of 10 participants to ensure that everybody engages in the discussion.

- Engage in the discussion and reflect:
 1. How did you find the assignment?
 2. What was easy for you?
 3. What was challenging for you?
 4. How can you tackle these challenges?
 5. What do you need to tackle these challenges?

The chosen method has 2 objectives. On the one hand, it should provide Educational Entrepreneurs with information about the importance of the concepts of inclusion and multiculturalism in the E³UDRES² project and its operationalization in the I Living Lab. On the other hand, it is an exercise on self-reflection and definition of teaching-learning methodologies and approaches that are culturally responsive. The individual experience of each Educational Entrepreneur, when shared, enriches the multicultural understanding of the group and allows for learning based on experience.

In the group discussion, T-shaped innovators and trainers, step into the role of a coach. We do not offer solutions to questions but try to stimulate entrepreneurial thinking by asking open questions and connecting the Educational Entrepreneurs.

Contents

Introduction

What is culture?

<https://www.menti.com/uwifjt9oz7>

How culturally competent are you?

<https://docs.google.com/forms/d/e/1FAIpQLSftqRuBo6fdPFRcCbzxSHjiAvE8Rm8mlavvCOcLvswmxS5Kvw/viewform>

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Best practices

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Session Plan

		
<h1>Pilot I- Living Lab</h1>		[4 th June 2021]
Subject Inclusion and Multicultural awareness Prepared By	Objectives¹ <ul style="list-style-type: none"> - Increase understanding and appreciation of one's own culture and background. - Identify and reflect on personal characteristics, qualities, and experiences with diversity and culture. - Reflect on personal pre-judgments about characteristics of other people. - Learn to accurately perceive and understand cultures and backgrounds of other persons. - Understand the value and principles of developmentally appropriate multi-cultural education and anti-bias education. - Understand and reflect on the emotional impact of unfair practices. - Practice positive and respectful communications. - Create plans to stand up against discrimination. - Improve academic writing skills. 	Materials Required <ul style="list-style-type: none"> - Study materials - Slide deck with embedded video materials and assignments - Fact sheet Additional Resources <ul style="list-style-type: none"> - Suggestions included in fact sheet Additional Notes <p>This module is about inclusion and multicultural awareness and is divided in 3 specific topics: 1) Cultural competences in <u>European curricular goals</u> and in relation with Sustainable Development Goals; 2) Key concepts: culturally responsive teaching/ curriculum; 3) Strategies for culturally responsive teaching.</p> <p>It is planned to be completed in 3 (basic level) to 5 hours (advanced level), with asynchronous work and one synchronous session.</p> <p>Discussion: 60 minutes (synchronous session on 4th of June 2021)</p>
Session Plan		Time
Introduction	Presentation of the session and work methodology to be developed.	2-3 min
Information	Show the results to the questionnaires answered by the participants. <ul style="list-style-type: none"> - What is culture? https://www.menti.com/uwjft9oz7 - How culturally competent are you? https://docs.google.com/forms/d/e/1FAIpQLSftqRuBo6fdPfrCcBzxSHjAvE8Rm8mlavvCOclvsymx55Kvw/viewform 	2-3 min
Feedback	Ask the participants about articulation with the concepts covered in asynchronous session.	5-7 min
Tasks	Distribute participants, forming international groups (3 or 4 person/ group/ thematic issue), to discuss the following issues: From the asynchronous module and the cultural knowledge of each region: <ul style="list-style-type: none"> - What do you consider essential to include in the preparation of an inclusive and multicultural ILL? - How do you consider these cultural competences should be developed in your ILL, as a specific module or throughout integrated tasks? - What are the (multi)cultural challenges of doing an I Living Lab with the students of your region? - Which methodologies or task may enhance/improve better cultural competences? - What culturally integrative and responsive pedagogical model can be used? 	15 min 25 min
Summary	Reflective synthesis and future <ul style="list-style-type: none"> - What are the main ideas that I get from this module? - What can I develop from this module? - What challenges will I face on this matter? - How will I start working from this module? 	5 min

Training module 3: Method of design thinking

Fact sheet

Background

In this third module educational entrepreneurs (EE) will gain a more comprehensive understanding of Design Thinking as Project-based Learning (PBL) method. The training concept is designed to give an

overview of the design thinking process and specific methodology which can be applied in working with students. The material includes practical methods and tools for implementing and guiding the steps of the design thinking process, as well as videos and additional literature resources for additional in-depth study of the topic.

This module is an important step in the training and must be seen as the easy explanation of the method which can/should be applied during the I Living Labs.

In this module, the educational entrepreneurs get acquainted with various methods, which can also be tested and evaluated during the assignments included in the module, so that at the end of the module you can give your assessment of the usefulness of the methods for I Living Lab.

Study materials

- Slides with introducing information, video materials and assignments
- Additional reading books and materials

Instructions

- The educational entrepreneurs process the materials in their own time
- They do assignments based on specific questions
- They develop practical process for application of design thinking method in I Living Lab
- In groups, the educational entrepreneurs discuss questions, comments, etc.

Objectives

- What is design thinking? How different is design thinking from other approaches?
- What are the stages of the design thinking process? Can they be so changed and how do they interact?
- Where and by whom design thinking has been applied? (Examples of good practice)
- How can design thinking method be applied during the I Living Labs?
- What kind of knowledge or/and skills should have participants of I Living Labs to be able to apply design thinking method?

Workload

- Processing slide deck and provided external resources: 120-180 minutes
- Discussion: 60 minutes

Methodology

- Concentrated information and short videos provide the educational entrepreneurs with explanation about design thinking as a method and tool
- The EE are introduced to Stage-Gate as one of Design thinking methodologies better known in project management, focusing on the economic and financial aspects of the process
- Later SPRINT method, tool and good practise is presented to demonstrate practical approach and benefits
- After this method, there is provocative suggestion to use De Bono The Six Thinking Hats as tool for the design thinking process promotion allowing the evaluation of the impact of different ways of thinking at each stage of the design process
- At the Fourth assignment the educational entrepreneurs in smaller groups of 6-8 participants are encouraged to find out:
 1. Can design thinking method be used during I Living Labs?
 2. Which of the presented sub-methods would be to follow with particular part of the design thinking process?
 3. What benefits would gain participants of I Living Labs from using design thinking approach?

- In group discussions EE reflect findings and feedback gained during assignments. T-shaped innovators and trainers step into the role of a coach. They do not offer solutions to questions but try to stimulate entrepreneurial thinking by asking open questions and connecting the educational entrepreneurs.

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Pilot I Living Lab

[4th June 2021]

Subject	Objectives	Materials Required
Method of Design Thinking	<ul style="list-style-type: none"> - Increase understanding of design thinking as method of project-based learning and identify how different is design thinking from other approaches - Analyze stages of the design thinking process - can they be so changed and how do they interact? - Explore examples of good practice: where and by whom design thinking has been applied - Understand if and how can design thinking method be applied during the I Living Labs - Identify what kind of knowledge or/and skills should have participants of I Living Labs to be able to apply design thinking method 	<ul style="list-style-type: none"> - Slide deck with embedded video materials and assignments - Fact sheet
Prepared By		Additional Resources <ul style="list-style-type: none"> - Suggestions included in slide deck "Worth Reading" section
		Additional Notes <p>In this module, the educational entrepreneurs (EE) get acquainted with various methods, which can also be tested and evaluated during the assignments included in the module, so that at the end of the module one can give assessment of the usefulness of the methods for I Living Lab.</p> <p>It is planned to be completed in 3 to 5 hours with asynchronous work and one synchronous session.</p> <p>Discussion: 60 minutes (synchronous session on 4th of June 2021)</p>
Session Plan		Time
Introduction	Presentation of the session and work methodology to be developed.	3-5 min
Information	Different appliances of design thinking methods <ul style="list-style-type: none"> - SPRINT - STAGE -GATE - THE SIX THINKING HATS 	10-15 min
Tasks	MURAL board: The Six Thinking Hats Invite participants to join MURAL desk The Six Thinking Hats, instruct and allow to work with notes. Discussion and feedback with educational entrepreneurs (EE) about results.	10 min
	MURAL board: Taking next step: Lets link design thinking with I Living Labs Invite participants to join MURAL desk and allow to work with notes regarding the use of design thinking methods in running I Living Labs: <ul style="list-style-type: none"> - How would EE involve these methods in running of I Living Lab? - Do EE have any concerns using this method in running of I Living Lab? - Which stages can be applied or adjusted? 	15 min
	Discussion and feedback with educational entrepreneurs (EE) about results.	5 min
Summary	Reflective synthesis and future <ul style="list-style-type: none"> - What are the main ideas that I get from this module? - What can I develop from this module? 	5 min

Training module 4: Future skills

Factsheet

Background

In this module educational entrepreneurs (EEs) were introduced to the idea of Future Skills, as a relevant part of the university of future. Future Skills put the emphasis on the personal development of the students during the interactive, project oriented, team work tasks they perform. Relevant materials on the basic principles of Future Skills were provided. Since some of those skills were studied during other training modules in more details (e.g. Design Thinking) or generally understood and accepted by current university practices, those skills were highlighted which are less frequently applied in higher education.

A better understanding of those Future Skills helps the Educational Entrepreneurs to create their I Living Labs in such a way which assists students to develop those competences.

Study materials

- Slide deck (series of slides) in a pdf format introducing 9 Future Skill areas (Future_Skills_complete_slide_deck_MATE.pdf)
- Further, optional reading texts (chapters, articles, etc.)
- Case studies about the following companies: dm-drogerie markt GmbH + Co. KG, J. Schmalz GmbH, Testo SE & Co. K, Robert Bosch GmbH, Karl Otto Braun GmbH & Co. KG, IBM Germany GmbH.

Instructions and requirements

- The EEs could proceed with the material at their own speed individually.
- Assignment:
 - o preparation of an outline of a Future Skills-focused project connected to their own field
 - o possible formats
 - a one-pager showing the logically structured framework of the plan
 - a 3-minute speech (pitch presentation)
- EEs developed practical suggestions for possible involvement of future skills in their field.
- In groups, the educational entrepreneurs discussed questions, anticipated problems and their solutions, comments, etc.

Objectives

- To get a better understanding on the following focused areas:
 - o decision competence
 - o systems competence
 - o initiative and performance competence
 - o self-competence
 - o communication competence
 - o self-determination
 - o future and design competence
 - o ambiguity competence
 - o reflective competence
- To see examples of best practices – **Case studies**
- To study how future skills might be applied in I Living Labs

Methodology

For preparation, a slide deck was provided to EEs including some external references and short B1-B2 level English language videos that helped individual preparation (asynchronous sessions). The training was organized as a 2-hour synchronous online session. Three T-shaped workers led the module applying the following steps and methodology:

- **Interactive part:** Each respondent chose 2 Future Skills: one of which has already been applied and one that has been found difficult to integrate in the curriculum. EEs had 2 minutes to elaborate on their experiences giving a **pitch talk**. A strict time limit of 2 minutes was to ensure that all groups can be involved equally.
- Integrating **Kahoot** which is an online platform, participants were asked to answer some quiz questions regarding the material they had worked on before taking part in the 2-hour synchronous session as preparation. The **game** was aimed at pointing out the possible anticipated challenges.
- **Follow-up:** Participants summarized and discussed which future skills this particular 2-hour synchronous session was focused on. The **group discussion** was also aimed at giving further suggestions on how to put methodology into practice and how to solve anticipated problems.

The chosen method had 2 goals. On the one hand, it was to **provide** the educational entrepreneurs with **information** about the concept of Future Skills, the anticipated problems and their solutions. On the other hand, it was **an exercise in self-reflection**, drawing up and sharing practical ideas on how to build Future skills into EEs own ILLs. Consequently, the educational entrepreneurs were allowed to acquire methodology via experience-based learning.

In the group discussion we, as T-shaped innovators and trainers, stepped into the role of a coach. We did not offer solutions to questions but tried to stimulate entrepreneurial thinking by asking open questions, encouraging EEs to share own experience and connecting the educational entrepreneurs.

Workload

- Processing slide deck and provided external resources: approximately 5 hours
- Discussion: 60 minutes

Training module 5: Digital skills

Means of digitalisation



Core documents for reference:

- Digital Education Action Plan (2021-2027) Resetting education and training for the digital age
- The Digital Competence Framework 2.0

Management and development processes

- Because experience levels are different;
- Because we are part of different cultures;
- Avoid reinventing the wheel and help building up knowledge instead.

Tools for project management and communication

Support level	Reason for being used	Tool
Requirements management	Keep track of the necessary requirements and deliverable	Spreadsheets, RMT00 etc.
System architecture	Describing the components of the systems and their interaction	StarUML, draw.io
Task and issue management	Keep track of the tasks and responsables	Trello, JIRA, OpenProject
Storage infrastructure	Provides an organized structure of the project's setup	Microsoft Teams, Google Drive
Team communication	Shape communication and cooperation among team members	Microsoft Teams, Zoom, Jitsi

Training module 6: Feedback and assessment

Fact sheet

Background

Feedback and reflection are a continuous process that accompanies students in the I Living Lab. Both methods lead to the assessment.

In Module 6, the educational entrepreneurs get theoretical input on feedback and reflection and learn about different assessment methods. There are also some hints on “how to do it”.

Study materials

- Slide deck with embedded video material and assignments
- Additional reading material

Instructions

- The educational entrepreneurs process the materials in their own time
- They do assignments based on specific questions
- In groups, the educational entrepreneurs discuss questions, comments, etc.

Objectives

- What is 360-degree feedback?
- How to give and receive feedback?
- What is Gibbs Reflective Cycle?
- What are important methods for assessing future skills?
- How can you use these methods with students?

Workload

- Processing slide deck (asynchronous): 105 minutes
- Discussion (synchronous): 45 minutes

Methodology

- Content slides and a short video inform the educational entrepreneurs about the topic.
- Building on this, educational entrepreneurs share their thoughts on the two assignments on a Mural board.
- During the synchronous online session, the posted thoughts are discussed in small groups.
- And a role play is used to practise giving feedback in the synchronous meeting.

The chosen method has 2 objectives. Firstly, it is to provide the educational entrepreneurs with information, and secondly, it is an exercise in giving feedback. The latter is part of the I Living Lab. By approaching it in this way, we enable the educational entrepreneurs to take steps in experiential learning.

In the group discussion, we, as T-shaped innovators and trainers, step into the role of a coach. We do not offer solutions to questions but try to stimulate entrepreneurial thinking by asking open questions and connecting the educational entrepreneurs.

Bibliography

360-degree-Feedback

The Evolution and Devolution of 360° Feedback, Bracken, Rose & Church, Industrial and Organizational Psychology, 9(4), pp 761–794 December 2016.

Your guide to 360° feedback: [What is 360 degree feedback?](#) [1 June 2021]

Feedback ladder and Feedback Tango

<https://sonyaterborg.com/2018/10/21/ladder-of-feedback> and embedded the link to "IDEO-FeedbackTango.pdf" [1 June 2021]

Reflection

<https://www.crowe-associates.co.uk/coaching-tools/gibbs-reflective-cycle/> [1 June 2021]

Interesting reading materials

Thanks for the Feedback: The Science and Art of Receiving Feedback Well / Douglas Stone, Sheila Heen, Penguin (2015). ISBN 978-0670922635.

Session plan



Pilot I- Living Lab

[18th June 2021]

Subject	Objectives	Materials Required
Feedback, Reflection & Assessment Prepared By	<ul style="list-style-type: none"> - And a role play is used to practise giving feedback in the synchronous meeting. - What is 360-degree feedback? - How to give and receive feedback? - What is Gibbs Reflective Cycle? - What are important methods for assessing future skills? - How can you use these methods with students? 	<ul style="list-style-type: none"> - Study materials - Slide deck with embedded video materials and assignments - Fact sheet <p>Additional Notes</p> <p>This module is about feedback, reflection and assessment and is divided in 3 specific topics: 1) Giving and receiving feedback 2) Reflection and 3) Assessment methods.</p> <p>It is planned to be completed in app. 3 hours, with asynchronous work and one synchronous session.</p> <p>Synchronous session: 50 minutes (on 18th of June 2021)</p>
Break	10 min break to get some fresh air	
Introduction	Presentation of the session and work methodology to be developed.	
Role play	<p>is used to practice giving feedback in the synchronous meeting</p> <p>Introduction by Kerstin -> Christina had to prepare a presentation about 360° degrees feedback with a specific focus for use on educational purpose. Target group study peers, did not read the book and should get a good overview about the topic</p> <p>Duration: 1:30 min – prepare presentation.</p> <p>Questions: 5 min from the audience - stick to questions only</p> <p>Feedback: 10 min</p> <p>Summary: 1:30 min</p> <p>Problems in Presentation</p> <ul style="list-style-type: none"> • Technique not tested before • Readability of text 	

	<ul style="list-style-type: none"> • Grey color of heading • Position and use of pictures • "You can have a look on your own" • Small font size • no time for reading the slides • Typos in text • Not focused on educational purpose • Design distracting • No sources used • Last slide with no information • Too long – 7 slides, in-between slides • Talking too long when answering questions – try to be as short as possible to get as much questions as possible • Arguing against feedback • Looking at the presentation or somewhere not to the audience • Too fast
Information & Discussion	<p>Show and discuss the results of the assignments on the mural platform.</p> <p>FEEDBACK</p> <ul style="list-style-type: none"> • Which people can give feedback to your students in the future I Living Lab? • In which situations can your students give and receive feedback? <p>ASSESSMENT</p> <ul style="list-style-type: none"> • What are your thoughts about this form of assessment? <p>Link to the Mural board.</p>
Summary	<p>Reflection at the end</p> <ul style="list-style-type: none"> - What is your <u>take away</u> from this learning module? (Each participant one word)

Studyguide

E³UDRES²

Engaged and Entrepreneurial European University as
Driver for European Smart and Sustainable Regions

STUDY GUIDE

Course Project	EUDRES	Level	Open to all levels
Work Package	WP3	Year	Starting from 2nd year
Name	I-LIVING LAB (ILL)	ECTS	6
Department	Part of European multicampus future university	Term (Teaching weeks)	1 st Semester and 2 nd Semester (6 weeks)
Scientific area	Transdisciplinary course	Elective/ Mandatory	Elective

Scholar Year	Teacher(s)	Course Head Teacher
2021-22	Educational Entrepreneurs	T-shaped innovators Educational Entrepreneurs

Total workload	expected total workload of around 150 hours	Total contact workload	Depending on type of I Living Lab <ul style="list-style-type: none"> • Option 1: with international week approximately 30h + 20h synchronous sessions • Option 2: without international week: approximately 30h of synchronous sessions
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			Synchronous sessions will be recommended to be held in the evening hours (after 18:00 CET) and would be a minimum of 3 hours
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Type of classes					
<i>T - lectures</i>		<i>TP – theoretical-practical</i>		<i>PL – practicals</i>	X
<i>TC – fieldwork</i>	X	<i>S – seminars</i>		<i>E – internship</i>	
<i>OT – tutorials</i>		<i>O – other</i>	X		

Number of hours of autonomous work					
Internship		<i>Project</i>	70	<i>Fieldwork</i>	70
Study		<i>Assessment</i>	10		

1. Introduction

E³UDRES² is a unique European university that is widely recognized for ground-breaking approaches to challenge-based higher education, mission-oriented research, human-centered innovation as well as engaged knowledge Exchange. Thus, E³UDRES² promotes a shift from

- (i) teaching to learning;
- (ii) all-knowing professors to experienced, competent, instructional coaches, educational entrepreneurs, T-profile innovators and living lab orchestrators;
- (iii) mass education to individual and flexible learning paths;
- (iv) traditional lectures to flipped/inverted classroom, game-based learning, learner-centered, challenge-based, experimental, engaged learning;
- (v) exclusively theoretical education to practical and work-based experiences
- (vi) rigid curricula to modular approaches, micro-credentials and life-long learning
- (vii) single-institution study programmes to jointly delivered degree programmes
- (viii) traditional textbooks to open educational resources
- (ix) academic ivory-towers to open innovation ecosystems
- (x) administration to service

The I-Living Labs (ILL) are closely related to the innovation cycle underpinned by E³UDRES². The “I” stands for inspiring, innovative, intercultural, international, interdisciplinary, intersectoral, inclusive and intense. E³UDRES² adopts the concept of Living Labs for the development of “Future Universities” as well as for smart and sustainable regions.

Living Labs are defined as user-centred, open innovation ecosystems, often operating in a territorial context, integrating concurrent research and innovation processes within a public-private-people partnership. The concept is based on a systematic user co-creation approach integrating research and innovation processes in real-life use cases that involve cross-disciplinary teams with experts from various stakeholders. User communities are not integrated as observed subjects only but also collaborate as a source of creation. In sum, the I-Living Labs (ILL) are curricular spaces where students, stakeholders and teachers get together and meaningful learning takes place.

2. Intended learning outcomes (Knowledges, skills and competencies to be developed by the students)

Learning outcomes are statements of what a learner knows, understands and is able to do after completion of learning.

For the I Living Labs learning outcomes can't be reduced to fixed statements of learning outcomes since it deals with the creation of value that does not exist prior to the learning process and cannot be foreseen in abstraction.

So the learning outcomes should not be taken as normative statements to be directly transposed into actual learning activities, or be used to measure student performance. They are a basis for the development of specific learning outcomes that are fit for the specific context and a basis for the development of performance indicators.

The learning outcomes for the I Living labs are a mixture of future skills and learning outcomes from the EntreComp framework.

The learning outcomes can be found in the annexe

For each learning outcome 4 levels are available. A student choses a personalized learning path by selecting individual learning outcomes and expected growth from one level to another. This learning path is linked to the assessment methodology.

3. Syllabus

Main future skills promoted by the E³UDRES² concepts:

- Design-thinking
- Innovation
- Communication
- Cooperation
- Self-determination
- Future and design
- Self-efficacy
- self-competence
- Initiative and performance
- Reflective
- Ambiguity
- Ethical

For an in depth view on higher education future skills framing the E³UDRES² innovation cycles, see Ehlers, U.-D. (2020). Depending on the challenges raised for each I-LL, different future skills will be developed (at different levels) in articulation with the three main themes:

- (i) Human contribution to artificial intelligence
- (ii) Well-being and aging
- (iii) Circular economy

4. Demonstration of the syllabus coherence with the UC intended learning outcomes

E³UDRES² is a project to respond to the needs of the future and, therefore, aims to train higher education students to respond to those challenges, in transdisciplinary teams with stakeholders external to the higher education institution, to broaden horizons and to be able to be agents of change in the face of real and current problems in the regions involved.

Thus, the contents of ILL are based on future skills (Ehlers, U.-D., 2020) using the design thinking methodology, to promote critical, creative, and innovative thinking by all stakeholders.

5. Teaching Methodologies and practicalities

The I-Living-Labs applies design research methods and iterates the following main steps:

- (i) Co-Ideation & Co-Creation: bring together technology push and application pull into a diversity of views, constraints and knowledge sharing that sustains the ideation of new scenarios, concepts and related artefacts.
- (ii) Exploration: engage various stakeholders, especially user communities, at the earlier stage of the co-creation process for discovering emerging scenarios, usages and behaviors through live scenarios in real or virtual environments
- (iii) Experimentation: implement the proper level of technological artefacts to experience live scenarios with a large number of users while collecting data which will be analyzed in their context during the evaluation activity.
- (iv) Evaluation: assess new ideas and innovative concepts as well as related technological artefacts in real life situations through various dimensions such as socio-ergonomic, sociocognitive and socio-economic aspects; make observations on the potentiality of a viral adoption of new concepts and related technological artefacts through a confrontation with users' value models.

Pedagogical methods, such as design-thinking, design-research, and strategies, such as flipped/inverted classroom, game-based learning, learner-centered, challenge-based, experimental, engaged learning will support the I-LL implementation.

6. Demonstration of the teaching methodologies coherence with the curricular unit's intended learning outcomes

E³UDRES² takes a learner-centered approach and facilitates individual learning paths in order to empower, support and challenge creative talents for future work in smart and sustainable regions. E³UDRES² universities teach not only subject-related, state-of-the art knowledge, but they also focus on transferable skills for the present and future (working) world. E³UDRES² guarantees excellent teaching with innovative methods that aim at a distinctive competence profile.

7. Assessment methodologies and evidences

The I Living Lab is a safe working and learning space that allows learners to try things out, fail and learn from failure. In doing so, they develop and sharpen their future skills and grow on a professional and personal level. Feedback

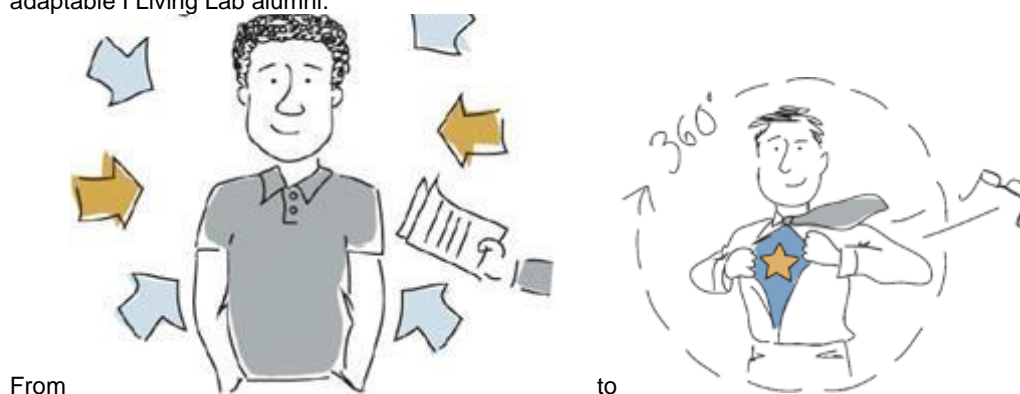
and reflection play an essential role in supporting this process. Different assessment methods show the personal learning success of each student through the I Living Lab. For now, we focus on the students as learners. During the EUDRES time span, we will also address all people as learners (e.g., EEs, external stakeholders).



Giving and Receiving Feedback

360-degree feedback

360-degree feedback is a feedback process where not just superiors but also peers and sometimes even external persons (e.g., stakeholder) evaluate the learners. Therefore, I Living Lab learners will receive continuous feedback from Educational Entrepreneurs (EE), coaches, judges & external stakeholder, team members & peers in different forms. And develop themselves from a learner receiving feedback to a responsible, self-reliant, independent, adaptable I Living Lab alumni.



During I Living Lab – when are points to give and receive feedback?

In general, learners are asked to give feedback and talk about their feelings in different situations:

- After each presentation they do
- Prepresentations – criteria for presentation as guideline for giving feedback

For each of this situation, there are different forms of guiding the feedback: 1) with or 2) without given feedback criteria.

Feedback of external stakeholders can be integrated in various ways, e.g., through attending official presentations or also regular lab meetings. However, they always should be introduced and engaged in giving feedback.

How to introduce giving and receiving feedback?

In the beginning of the I Living Lab, there needs to be a brief introduction of 360-degree feedback. And then learning by doing starts after each presentation that is reflected afterwards through a moderator. The very first contact with feedback should be with the first presentation they perform. After presentations of all groups, each group separately discusses the strength and weaknesses of all presentation and names 3 strength and 3 weakness that can be improved.

After a presentation (e.g., one day after presentation), moderation should be as followed:

1. presenting group itself describes how they felt and saw their presentation,
2. learners give feedback.

Moderator needs to take responsibility to guide the learners during feedback – e.g., no defending. It is about receiving feedback – means listening and asking question for a better understanding but no discussion and arguing why they did it as they did it.

Reflection

All reflection phases in the I Living Labs are based on Gibbs Reflective Cycle.

Gibbs Reflective Cycle

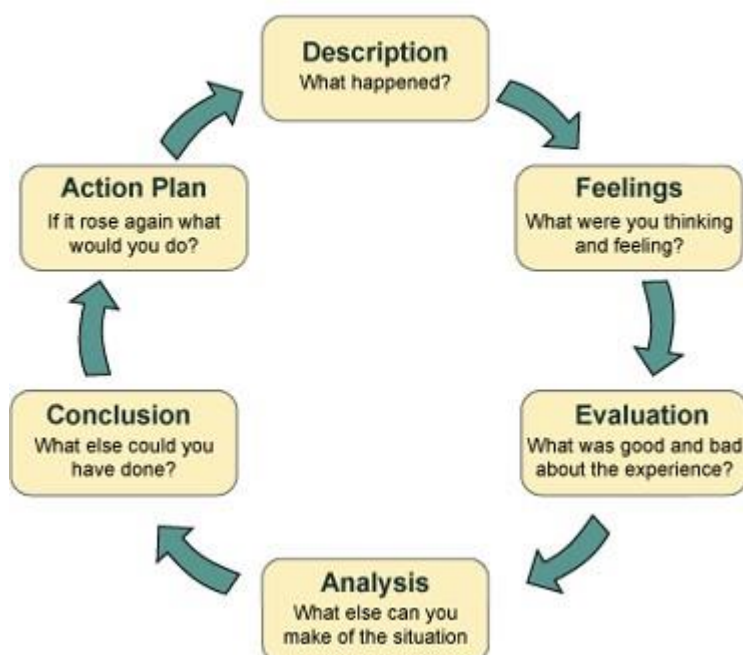


Figure : gibbs-cycle.png · <https://www.crowe-associates.co.uk/coaching-tools/gibbs-reflective-cycle/> [20.08.2020]

These are the five stages in the cycle:

Description: First, ask the person you are coaching to describe the situation in detail. At this stage, you simply want to know what happened – you will draw conclusions later.

Feelings: Next, encourage them to talk about what he thought and felt during the experience. At this stage, avoid commenting on their emotions.

Evaluation: Now you need to encourage the person you are coaching to look objectively at what approaches worked, and which ones did not.

Conclusions: Once you have evaluated the situation, you can help the person draw conclusions about what happened. Encourage them to think about the situation again, using the information that you have collected so far.

Action: You should now have some possible actions that the person can take to deal with similar situations more effectively in the future. In this last stage, you need to come up with a plan so that they can make these changes. Once you have identified the areas they will work on, encourage them to commit to taking action, and agree a date on which you will both review progress.

Feedback and reflection are a continuous process that accompanies students in the I Living Lab. Both methods lead to the assessment.

Assessment

Assessment is a challenge as learners develop individually based on their personal goals and prior discipline knowledge. As the learners develop their skills individually, the Educational Entrepreneurs can select from various assessment tools.

Personal Goals

Each learner defines their personal learning goals for personal development. It is important to define personal goals at the beginning of the I-Living Lab. The learners need to set goals that they want to achieve for their future.

There are two key points for the personal development:

1. Reflective practice,
2. Development of a learning community.

The students need to start trusting each other and the Educational Entrepreneurs (EE) as coaches to find their real goals and development path.

Already in the first days, learners have to be encouraged to reflect on their personal goals. Therefore, learners will set their personal goals (only a few) at the beginning and deepen them within the context of personal goal setting sessions. The goals are set together with the EE in a personal goal setting session. This creates a clear plan for the student and for the responsible EE to follow and give feedback on.

The personal goals are defined as smart goals. During the process, it is useful to check in personal goal setting sessions if the goals are still ok or need to be adjusted or changed.

Topics of the Personal Goals

In principle, personal goals should be linked to learning outcomes of the I-Living Lab. The alignment of the personal goals includes the following topics:

Life and professional skills

Learning and innovation skills
 Information, media and technology skills
 Critical thinking and problem solving
 Communication
 Collaboration
 Creativity

Logbook

By keeping a logbook every week, learners learn how to reflect and why it is important. This is important for their development as reflective practitioners. All logbooks are open (on the communication platform used) for any learner. Learners also read other logbooks because they need to give feedback to each other.

We want learners to learn from each other. Learners can decide for themselves what they share and how deep that information goes. This is also called informal learning. But in any case, what is shared here should remain in the community of the I Living Lab. It is their learning experience and our learning community that we want to improve.

Portfolio

The learners create and share their personal portfolio showing their learnings within the I Living Lab. They choose three to four matters (knowledge, skills, competences and/or attitudes) they have learned and deepen while studying in I Living Lab. They need to find knowledge, skills, competences and/or attitudes developed that are important from their professional point of view. These can be whatever the students find important from their professional development: something they have done like developing a logo or content, information for their project, webpage or developing business plan or making an innovative product for their field or developing their skills to work in a team or developing their skills e.g., to reflect, give feedback, or give a presentation. The learners are the only one to know what the needed matters for their profession are.

With this portfolio it is not enough to show what they have as a final product, skill, knowledge, change of behaviour, but they must share how and why did they develop things in a way they did. Learners need to think about self-evaluation and reflections, feedback they have got from others and from the clients, costumers, and coaches. They provide documents or parts of them to prove what they have been doing in their portfolio. As an additional task they are asked to think about how they want to develop further these matters after finishing the I Living Lab.

Presentations

Learners have to pitch their solutions and prototypes and have the chance to get constructive feedback to further develop their solution or rethink their approaches. There is feedback along set criteria from all involved participants and from the learners themselves.

Assessment Report & Assessment Talk

In preparation for the assessment talk, learner need to prepare a written assessment report. In this report, learners need to reflect on the defined learning goals. Based on these competences, they think about the grade they deserve for their performance and argue why.

During the assessment talk, students present their portfolio and argue their proposed grade in front of the responsible EEs. The decision about the grade is a joint reflective discussion between the learner and the EEs.

8. Practicalities

- Each I Living Lab is run by 2 facilitators, so called Educational Entrepreneurs (from different partner institutions)
- Language in I Living Lab is English
- 2 starting dates in academic year 2021-2022
 - Semester 1: 8 November 2021 – 17 December 2021 (without international week)
 - 8 November: opening event with pitches from different I Living Labs
 - 17 December: closing event with pitches by the students
 - In the weeks in between: recommendation of 3 - 5 hours in synchronous sessions
 - Semester 2: 7 March 2022 – 29 April 2022 (with international week)

References

Ehlers, U.-D. (2020). Future skills. The future of learning in higher education. eBook ISBN: 978- 3-658-29297-3, DOI: 10.1007/978-3-658-29297-3

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

			Relying on support from others	Building independence	Taking responsibility	Driving transformation, innovation and growth
			With support from others, some autonomy and together with my peers	On my own and together with my peers, taking and sharing some responsibilities	Taking responsibility for making decisions and working with others, sometimes with some guidance.	Taking responsibility for contributing to complex developments in a specific field
			Discover and explore	Experiment and dare	Improve and reinforce	Expand and transform
Future skill	Hint	Descriptor	Level1	Level2	Level3	Level4
Design thinking	Use method of design thinking	I am able to apply design thinking methods in order to use concrete methods to carry-out creative development process.	I can describe the method and know the different spaces in design thinking.	I participate in design thinking process actively.	I can look critically on the process of design thinking within my group and can suggest improvement.	I take responsibility for the design thinking process. I am active and facilitate the process in the way that the group has an innovative perspective and is thinking out of the box.
Innovation	Develop creative and purposeful ideas	I can develop several ideas and opportunities to create value, including better solutions to existing and new challenges. I can explore and experiment with innovative approaches. I can combine knowledge and resources to achieve valuable effects.	I can show that I am curious about new things. I can explore new ways to make use of existing resources	I can experiment with my skills and competences in situations that are new to me. I can actively search for new solutions that meet my needs	I can actively search for and analyse new solutions that improve the value-creating process.	I can combine my understanding of different contexts to transfer knowledge, ideas and solutions across different areas
			Alone and as a part of a team, I can develop ideas that create value for others	I can experiment with different techniques to generate alternative solutions to problems, using available resources in an effective way	I can describe different techniques to test innovative ideas	I can tailor a variety of ways of involving stakeholders to suit the needs of my value-creating activity
Communication	Inspire, engage and get others on board	I am able to adapt the improve and adapt the discourse, dialog and strategic communication aspects. I can inspire, persuade and communicate effectively. I can use media effectively	I can communicate my own and my team's ideas to others persuasively by using different methods (for example posters, videos, role-play, ...)	I can communicate imaginative design solutions to stakeholders from different backgrounds effectively	I can communicate the vision for my (or my team's) venture in a way that inspires and persuades external partner organisations, volunteers, new member and affiliate supporters.	I can take part in constructive discussions with the community that my idea is targeted at.

Cooperation	Team up and work together	I can develop their ability and disposition to cooperate and collaborate in intercultural teams and interactions within or between organizations.	I am open to working alone as well as with other, playing different roles and taking some responsibilities. I can show respect from others, their background and situations	I can work with a range of individuals and teams and contribute to group decision-making constructively. I am open to the worth that others can bring to value-creating activities	I can build a team based on the individual knowledge, skills and attitudes of each member. I can value diversity as a possible source of ideas and opportunities	I can give people the help and support they need to perform at their best within a team. I can support diversity within my team or my organisation
Self-determination	Staf focused and don't give up	I am able to overcome external difficulties and deliver the results.	I am determined and persevere when trying to achieve my (or my team's) goals.	I can overcome simple adverse circumstances	I can persevere in the face of adversities when trying to achieve my goals	I can cope with unexpected change, setbacks and failures.
Future and design	Change yourself and your environment	I can develop and prove the ability to continuously improve readiness for development, ability to challenge oneself and to make a change around them.	I recognize possibilities for changes in the region.	I can compare the different possibilities within my team.	I can apply the decision of the best possibilities in my team.	I can create changes.
Self-Efficacy, self-competence, Initiative and performance	Believe in yourself and go for it.	I am able to master the tasks at hand relying on one's own abilities and taking over responsibility for one's decisions.	I believe in my ability to achieve what I intend to. I can carry out tasks I am given responsibly.	I can judge the control I have over my achievements (compared with any control from outside influences). I am comfortable in taking responsibility in shared activities.	I believe in my ability to carry out what I have imagined and planned, despite obstacles, limited resources and resistance from others. I can take individual and group responsibility to carry out simple tasks in value creating activities	I believe in my ability to understand and take the good out of experiences that other may label as failures. I can encourage others to take responsibility in value-creating activities
	Believe in yourself and keep developing	I can reflect on my needs, aspirations and wants in the short, medium and long term. I can identify and assess my individual and group strengths and weaknesses.	I can describe my needs, wants, interests and goals	I can reflect on my individual and group needs, wants, interests and aspirations in relation to opportunities and future prospects	I can translate my needs, wants, interests and aspirations into goals that help me reach them.	I can help others reflect on their needs, wants, interests and aspirations and how they can turn these into goals.
Reflective	Reflect and learn from both success and failure (your own and other people's)	I can reflect over my past decisions and then quantify/measure the results of my actions.	I can provide examples of failures that have led to valuable achievements	I can reflect on failures (mine and other people's), identify their causes and learn from them	I can reflect on my (or my team's) achievements and temporary failures as things to develop so as to learn and improve my ability to create value	I can help others reflect on their achievements and temporary failures by providing honest and constructive feedback.

Ambiguity	Making decisions dealing with uncertainty, ambiguity and risks	I can identify ambiguity in requirements and processes and can address it.	I am not afraid of making mistakes while trying new things. I explore my own ways to achieve things	I can actively look for, compare and contrast different sources of information that help me reduce ambiguity, uncertainty, and risks in making decisions.	I can find ways of making decisions when the information is incomplete.	I can pull together different viewpoints to take informed decisions when the degree of uncertainty is high.
Ethical	Assess the consequences and impact of ideas, opportunities and actions	I can identify ethical relevant actions and consequences and can provide relevant perspective premises.	I can describe in my own words the importance of integrity and ethical values	I am driven by honesty and integrity when taking decisions	I can take responsibility for promoting ethical behaviour in my area of influence (for example, by promoting gender balance, highlighting inequalities and any lack of integrity)	I make it my priority to make sure that ethical behaviour is respected and promoted in my area of influence

