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NEST

Co-Creating a New Form of Governance in Societal Transition for Healthy Living

Principles for the practical recognition and assessment of newly generated learning by students in SIEHL

(Deliverable 9.3)

Co-funded by the European Union



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EXECUTIVE SUMMARY

Deliverable 9.3 presents principles and practical approaches for recognising and assessing learning generated within Social Innovation Ecosystems for Healthy Living (SIEHLs) and integrating this learning into formal education systems across Europe. The deliverable demonstrates how experiential, challenge-based, and community-engaged learning can be validated through the European Credit Transfer and Accumulation System (ECTS), ensuring transparency, recognition, and portability of learning outcomes.

The report identifies multiple pathways through which learning in SIEHLs can be embedded in higher education and vocational education, including hackathons and maker days, curriculum modules, full course units, Blended Intensive Programmes (BIPs), internships, theses and dissertations, and microcredentials. These approaches create opportunities for students to apply academic knowledge to real societal challenges while developing competencies such as teamwork, problem solving, intercultural collaboration, project management, community engagement, and critical thinking.

Drawing on experiences from five NEST SIEHLs in Belgium, Finland, the Netherlands, Portugal, and Rotterdam, the deliverable illustrates how universities, vocational institutions, municipalities, healthcare organisations, companies, NGOs, and citizens can collaborate in living learning environments. These ecosystems provide authentic contexts where students co-create solutions to challenges related to health, wellbeing, social inclusion, sustainability, and regional development.

A key outcome of the work is the development of a framework linking SIEHL learning activities to ECTS recognition and lifelong learning pathways, including the use of microcredentials. The report highlights the importance of active learning methodologies, interdisciplinary collaboration, stakeholder participation, and reflective practice as foundations for transformative learning.

Overall, the deliverable demonstrates that SIEHLs can function as legitimate and accredited learning environments that bridge education, research, and societal innovation. By embedding real-world challenges within formal education, SIEHLs strengthen student employability, foster social innovation, and support the development of resilient and healthy communities across Europe.

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1. Learning within SIEHL Integrated with Formal Education

The Social Innovation Ecosystem for Healthy Living (SIEHL) can be a vehicle for connecting academic knowledge to the real challenges of society, creating a direct impact on the health, well-being, and sustainable development of communities.

Recognizing the skills and learning acquired in the context of a SIEHL is fundamental, especially in the context of the European Higher Education setting. In this sense, the current European Credit Transfer and Accumulation System (ECTS) can and should be used as a means of validating the skills and learning acquired in the pathways and work processes linked to SIEHL.

The ECTS system is an instrument adopted by most countries in the European Higher Education Area with the aim of making studies and courses more transparent and facilitating the recognition of academic qualifications and periods of study abroad. The ECTS represents learning based on concrete learning outcomes and the respective workload, where about 27 hours of effective work by the learner should be equivalent to 1 ECTS. Furthermore, the ECTS system also makes it possible to combine different learning styles, such as university and work-based learning, within the same study program or through lifelong learning.

Integrated in the ECTS system, the Diploma Supplement is an important tool of the European Higher Education Area for graduates to ensure that their degrees are recognized by higher education institutions, public authorities and employers in their home countries and abroad. It was designed as an aid to support the recognition of academic qualifications and offers a detailed description of the studies completed and provides an indication of the competences acquired to complete the course. The Diploma Supplement may also facilitate the transcription of skills acquired by the students during activities performed into SIEHLS.

Naturally, learning in the context of SIEHL can and should be recognized in formal education, such as higher education and/or vocational education, for several reasons:

1. it legitimizes experientially rich learning;
2. it values social and interdisciplinary skills;
3. it brings academia, community and the labour market closer together;
4. it promotes European mobility and transparency;
5. it strengthens lifelong learning;
6. it transforms educational institutions into living ecosystems of social innovation.

In this way, SIEHL is not just a complementary approach but fully integrates formal education and qualification systems. Through SIEHLs, it is possible to create environments where students, teachers, companies, municipalities, social organizations, and citizens collaborate on real and concrete problems to solve them and learning together in this process. We understand SIEHLs not only as a complementary space for participation and social transformation, but also as a legitimate environment for certified learning, valued academically and professionally.

However, how the activities in the SIEHL are integrated in formal Education? There is a very broad option to recognize learning and skills acquired into SIEHLs and validate it in academic qualifications throughout ECTS system. SIEHL can have an entire or part of a curricular or an extracurricular unit dedicated to its activities, as a living lab, especially those unit course that includes projects, fieldwork or practical classes components. Trainers, trainees, and SIEHL's community work as a team developing innovative solutions or results for the SIEHL's challenges. Other possibilities can include short courses, such as marker days and hackathons, or long courses such as curricula internships, theses or dissertations which can take places into SIEHLs, bridging the needs from academia with SIEHL's challenges. Finally, micro credentials can take place for validate academic qualifications during lifelong learnings, so this is a vehicle to recognize learning and skills acquired by the SIEHL's members, community, and citizen that would like to engage into SIEHLs activities.

So, in this chapter, we will address different methodologies for integrating learning within SIEHLs into formal education that was implemented during NEST project. We will include a brief description and real-world examples of different SIEHLs from various contexts and European countries within the NEST project.

2. MAKERDAYS AND HACKATHONS

Hackathon and Maker Days are experiential learning activities that encourage creativity, collaboration, and innovation, but they differ slightly in focus.

A Hackathon is an intensive, time-limited event in which participants work in teams to develop innovative solutions to a specific challenge or problem. Traditionally associated with technology and programming, modern hackathons can also focus on education, sustainability, social innovation, entrepreneurship, or community challenges. Participants collaborate, prototype ideas, and present their solutions at the end of the event.

Maker Days are hands-on learning events that emphasize designing, building, creating, and experimenting. Drawing on the principles of the Maker Movement, participants use a variety of tools, materials, and technologies to transform ideas into tangible products, prototypes, or learning artefacts. Maker Days foster creativity, problem-solving, critical thinking, and learning by doing in a collaborative environment.

In the context of SIEHL, both Hackathons and Maker Days provide powerful opportunities for learners to engage in active, inclusive, and collaborative learning experiences, applying knowledge to real-world challenges while developing creativity, teamwork, digital competencies, and innovation skills.

There is no fixed number of ECTS for a Hackathon or Maker Days. The number of credits depends on the workload, learning outcomes, and how the activity is integrated into the curriculum. However, short Hackathon/Makerdays of 1 or 2 days, considering 6 to 12 hour of intensive work (contact hours), and about 27 total work hours, can provide 1 ECTS; as well Hackathon/Makerdays including a preparation and reflection, considering 12 to 24 contact hours of intensive work and 54 total work hours for all Hackathon/Makerdays, and can provide 2 ECTS.

3. MODULES OF COURSE UNITS

Several course units have theoretical classes and other more practical component including, fieldwork classes or practical classes. In this context, SIEHL can be a special space for trainee dedicated some hours of leaning in a real-context setting. Thus, students can engage with SIEHL and integrate various activities that connect with theoretical component of curricular unit and the challenges that arise from SIEHL.

The learning process can be carried out through teaching and learning methodologies, especially active methodologies, such as gamification, flipped classroom, service-based learning, cooperative learning, project-based learning, among others.

Students can develop a service-based or project-based learning, individually or in a teamwork, supervised by the teachers. Several different curricular units, from different study program, can work together as a multidisciplinary community.

The number of ECTS credits for the module is variable and depends on the course units and student's assignment. A range between 1 and 3 ECTS credits seems to be appropriate, however different ECTS credits are also possible and can be evaluated case by case.

4. ENTIRE COURSE UNITS

The SIEHL can have an entire curricular unit dedicated to its activities. Thus, students can engage with SIEHL and integrate various activities that connect the curricular unit to the challenges that arise from SIEHL.

The learning process can be carried out through teaching and learning methodologies, especially active methodologies, such as gamification, flipped classroom, cooperative learning, project-based learning, challenge/problem-based learning, service-based learning, inquiry-based learning, among others.

The curricular unit can be integrated into a study plan, as a compulsory or elective subject. However, an extracurricular unit or elective subject can easily enable multidisciplinary teamwork among students.

The number of ECTS credits for the curricular unit is variable and depends on the student's workload, but a range between 3 and 6 ECTS credits seems to be appropriate. Different ECTS credits are also possible. Each case should be analysed individually.

5. BLENDED INTENSIVE PROGRAMS

A Blended Intensive Programme (BIP) is a short Erasmus+ study format that combines virtual collaborative teaching with a brief period of physical mobility. It promotes multidisciplinary, challenge-based learning and awards academic credit upon completion. It starts with a collaborative online learning, teamwork, or preparatory lectures and includes a face-to-face intensive week. A BIP can reach all types of students and staff from all backgrounds, study fields, and cycles. Programs must be organized by a minimum of 3 universities from 3 different EU/Erasmus+ countries and award a minimum of 3 ECTS credits. Erasmus+ grants are typically available to cover travel and accommodation expenses during the physical mobility phase.

A BIP offers opportunity to participants gain international experience in a more accessible, flexible, and sustainable way, once it brings together students, educators, and professionals from different countries. So, a BIP represents an ideal framework for implementing activities based on the needs of the SIEHLs, with an added advantage: promoting specially an intercultural exchange. By combining virtual collaboration with intensive international mobility, BIPs foster students and educators to have an immersive experience in SIEHL, facilitating an understanding of the SIEHLs challenges and needs.

The learning activities in SIEHL throughout a BIP can include cooperative learning, interdisciplinary project-based learning, or collaborative challenge/problem-solving, using design thinking or other active methodologies.

6. INTERNSHIPS, THESIS OR DISSERTATIONS

Within the SIEHL framework, internships, theses, and dissertations become transformative learning experiences that connect academic knowledge with real-world challenges. Through engagement with sustainability, inclusion, innovation, and community development projects, students apply interdisciplinary knowledge, develop professional and research competencies, and contribute to meaningful social impact.

A SIEHL-oriented internship should go beyond observation or routine tasks. Students should engage in projects that address challenges arise from SIEHLs. A thesis or dissertation can also serve as a research and innovation laboratory for SIEHL implementation. Students can develop engage in Action Research, Participatory Research, or Community-Based Research.

These methodologies align with SIEHL because they involve collaboration, reflection, innovation, and stakeholder participation. Through internships, theses, and dissertations, students can demonstrate competencies such as:

1. Sustainable problem-solving
2. Intercultural collaboration
3. Ethical decision-making
4. Reflective monitoring
5. Community engagement

This kind of learning can delivery 6 to 30 ECTS, depending on workload and learning objective. A possible range reference could be about ECTS could be Internship Module (6–15 ECTS), Bachelor Thesis (6–12 ECTS), Master Dissertation (15–30 ECTS).

7. MICROCREDENTIALS

Microcredentials are certified, short, and flexible learning experiences that recognize the achievement of specific knowledge, skills, and competencies across institutions, businesses, sectors and borders. Unlike traditional degrees or long courses, microcredentials focus on targeted learning outcomes and can be accumulated over time to support lifelong learning and professional development, ensuring that everyone has the knowledge, skills and competences they need to thrive in their personal and professional lives.

According to the European Commission approach, microcredentials should be:

1. Transparent and clearly describe learning outcomes.
2. Assessable, with evidence that competencies have been achieved.
3. Portable, allowing recognition across institutions and countries.
4. Flexible, supporting different learning pathways.
5. Stackable, meaning several microcredentials can be combined toward larger qualifications.

Examples include certifications in digital skills, sustainability, inclusive teaching, project management, innovation, or intercultural competence.

Microcredentials provide an excellent mechanism for embedding and recognizing the competencies developed through the SIEHL framework, once SIEHL connect several stakeholders and general people from community.

By awarding microcredentials linked to SIEHL competencies, institutions can make learning outcomes more visible, motivate community engagement, support lifelong learning pathways, and facilitate recognition by employers and educational organizations. This approach also strengthens the integration of SIEHL into formal education by providing a flexible and measurable framework for assessing and validating the knowledge, skills, and values developed through innovative learning experiences.

Typically, microcredentials can ranging from 1 to 10 ECTS, they can certify achievements in areas such as sustainability, inclusion, digital literacy, innovation, and intercultural collaboration, while also being stacked into larger learning pathways that support lifelong learning and formal qualification frameworks.

Table 1: Example of Formal Education to recognize learning within SIEHL

Formal education type	Brief	Effective work hours	Contact work hours	Accreditation	Possible active methodologies	Possible learning outcomes
Makerdays and Hackathons	Short/Intensive courses for innovation, designing, building, creating, and experimenting	25-60 hours	6-24 hours	1-2 ECTS	Experiential learning, Cooperative learning Project- or Problem-based learning	Creativity Problem-solving Teamwork Prototyping
Modules of Course Units	Fieldwork classes or Practical classes or Assignments from a curricular unit	25-60 hours	6-45 hours	1-3 ECTS	Flipped classroom Real-context learning Gamification Project-based learning Service-based learning,	Critical thinking Problem-solving Teamwork Prototyping
Entire Course Units	Compulsory or Elective curricular unit	75-180 hours	45-75 hours	3-6 ECTS	Gamification Cooperative learning Project- or Problem-based learning	Creativity Problem-solving Critical thinking

					Service-based learning	Multidisciplinary teamwork
Blended Intensive Programs	Erasmus+ study format that combines virtual collaborative teaching with a brief period of physical mobility with at least 3 higher educations involved from 3 European countries	75-180 hours	45-75 hours	3-6 ECTS	Gamification Cooperative learning Project- or Problem-based learning Service-based learning	Creativity Problem-solving Critical thinking Multidisciplinary teamwork Intercultural teamwork
Internships, Theses or Dissertations	A temporary work arrangement providing practical, hands-on experience or a formal academic document submitted to complete a degree.	150-900 hours	75-450 hours	6-30 ECTS	Cooperative learning Project- or Problem-based learning Service-based learning Inquiry-based learning	Critical thinking Problem-solving Learning-questions
Full semester or Minors	A standard academic term in which a full-time student enrols in a	900 hours	~450 hours	30 ECTS	Cooperative learning Project- or Problem-based learning	Critical thinking Problem-solving

	designated number of credits or an optional field of study pursued alongside your primary major.				Service-based learning Inquiry-based learning Work-based learning	Learning-questions
Microcredentials	Certified learning experiences to support lifelong learning and professional development	25-60 hours	6-45 hours	1-3 ECTS	Work-based learning	Creativity Problem-solving

8. SIEHLs NESTing Learning

During the NEST project 5 SIEHLs were very active in develop activities integrated in the formal education. To better understand how SIEHLs integrate formal education into their activities, it is important to better understand who each SIEHL is and how it works.

8.1 AWEL SIEHL in Belgium

The Academic Workplace for Primary Care (AWEL), at Artevelde University of Applied Sciences in Ghent, Belgium, bring together practice, research and education for innovate in health primary care service. The AWEL SIEHLs seeks to strengthen collaboration and coordination among healthcare providers and University.

This ecosystem brings together a diverse range of stakeholders—including healthcare professionals, citizens, clients, educators, researchers and policymakers—who collectively contribute to innovation of primary healthcare. In this context, students can integrate research projects to learn and innovate through collaboration for systemic change across sectors.



8.2 Eemsdelta SIEHL in The Netherland

Located in De Felze, the province of Groningen in the Netherlands, Eemsdelta SIEHL is part of a new generation of care facilities designed to bring together different healthcare organisations in a shared approach to service delivery. The facility brings together a mental health care organisation and two elderly care providers, working collaboratively to offer integrated, high-quality and future-oriented care to both residential and community-based patients.

At the heart of this collaboration is a commitment to improving health and care through an interprofessional learning environment. Researchers and innovation professionals work alongside practitioners to explore challenges emerging from everyday practice, while connecting these experiences with wider regional and national priorities and developments.

Students from vocational and higher education can be involved in learning activities, together with communities in the SIEHL, to work interprofessional in multidisciplinary teams together with professionals and rehabilitants on research assignments.



8.3 HyMy Village SIEHL in Finland

The HyMy Village is It is a university clinic in the Metropolitan University that provides social and health support to the surrounding community, functioning as a complement to the national health system. So, this initiative emerged as a social innovation response to a local need to transform the way society supports people with a partial capacity to work, particularly those recovering from mental health challenges. Its mission is to promote well-being through meaningful employment by bridging the gap between supported employment and the open labour market.

Guided by the principle “Everyone to work!”, the initiative seeks to create opportunities for people to actively participate in society through employment. This vision is grounded in shared ownership, co-creation and inclusivity, ensuring that all stakeholders are actively involved in shaping the solutions and can benefit from the outcomes.

In this context, students at the University of Metropolia have the opportunity to learn through hands-on activities, internships, projects, and dissertations, in a context of co-creation between students, teachers, and citizens who use the services.



8.4 Inside-Out Bragança SIEHL in Portugal

Inside-Out Bragança SIEHL was born by a partnership between Bragança Polytechnic University (IPB) and the iLocal, *Inteligência Local - Associação para a Regeneração, Desenvolvimento, e Governanças das Economias Locais* (Local Intelligence – Association for the Regeneration, Development, and Governance of Local Economies), a local NGO (https://www.instagram.com/ilocal.pt/) located in a village, *Vialares da Vilariça,* belonged to the *Alfândega da Fé* Municipality (https://www.smartrural27.eu/village/vilares-de-vilarica-regenera-village-2030/). Guided by the principle of learning born from within (Inside-Out), it focuses to promote territorial transformation through shared knowledge and innovation.

This SIEHL is located in a rural area, in Trás-os-Montes Region – Portugal's Northeast, and it is a living ecosystem for rural regeneration. Inside-Out Bragança evolve by bringing the Municipality of Alfândega da Fé into the ecosystem, since it seemed with only two stakeholders the reflection on the problems and challenges of the territory would not be sufficiently deep and comprehensive. In this context, the Municipality brings all local

stakeholders (community, primary and secondary school, agricultural cooperative, private companies, non-governmental associations, social and health services, among others) and IPB brings its workforce (students and educators) to create a diverse environment with aim of thinking about and building up the future of the territory in a co-creation movement.

Thus, this network includes around twenty organizations, from diverse areas such as culture, environment, health, economy, and education. It brings together communities, academia, and local actors to co-create sustainable solutions that strengthen wellbeing, inclusion, and resilience. The central bridge that connects this ecosystem is an IPB's extracurricular unit, challenge-based innovation, in which students, fresh minds, are invited to discuss and co-create solutions to the main challenges facing in this region.

In the challenge-based innovation extracurricular unit, ecosystem challenges are co-created with all stakeholders, aiming to frame real and context-based problems that have great impact on the entire community. Students together with local stakeholder representatives are driving by the IPB facilitators to bring innovative solutions/new approaches to these challenges in multidisciplinary teams, through a co-creation process. The results of the students' teamwork are presented to stakeholders, and if they are promising ideas/solutions, they can be further developed and applied in context. However, if these ideas/solutions still do not meet the needs of the stakeholders, they will serve to define new challenges for students' teamwork work on, and a new cycle starts.

This new way of working, uniting the municipality, academia, and local stakeholders, has been appreciated by neighbouring municipalities. Currently, Inside-Out Bragança SIEHL is an umbrella ecosystem composed of 3 different municipalities in Bragança. Although similar in origin, linked to the depopulation of the region, the 3 municipalities bring different challenges to the discussion:

- Alfândega da Fé: How can we attract workers, entrepreneurs, investors, agrotechnology to our emigrated region?
- Miranda do Douro: How can we keep our identity (music, language, and autochthone breeds) alive once Miranda population are decreasing?
- Mogadouro: How can we empower our local producers to innovate, best communicate, and scale up when local consumers are not anymore enough?



Activities	Mechanism	Outcome
How can we engage other stakeholders?	Meetings;	Institution of SIEHL_Bragança
What are the local products with positive impact SIEHL community health?	Cocreation project: Healthy Basket	VdV Healthy Basket report
How to relate genealogy information and health in SIEHL community?	Cocreation project: Who are our grandfathers' cousins?	Prototype of a digital platform to design genealogical trees
How can we capture the rich narratives of people?	Colleting of stories from locals' elderly.	Journal "Memories of April"
How to help local stakeholders to develop better applications to financing their activities?	Contribution to elaboration financing application document: "The Willow Wellness Center"	Grant application – in progress
How can we manage and mediated conflict of interests?	Workshop: "Breakfast and conversations about hunting"	Collective learning about relation human/nature
How to involve actively the SIEHL community habitants in the activities?	Workshop: "Future of Village"	Circus_Bô, first Edition
What are the local products that impact positively the health condition of SIEHL community?	In dept study: "Nutritional habits and health condition of SIEHL community"	Report and recommendations
How can bring the traditional community institution and resources to post-modern social business?	Workshop: "Rural Communities"	Collective learning about tradition and pos-modernity
How can we facilitate the integration of the immigrant community?	Co-creation project: Integration of the Immigrant Community	Innnovation Chart of Alfândega da Fé; prototype
How can we transform the perception of the region, making it an attractive destination to live, work and invest?	Co-creation project: Change in the Perception of the Value of the Territory	Innnovation Chart of Alfândega da Fé; prototype
How can we encourage an entrepreneurial culture among young people?	Co-creation project: Fostering Youth Entrepreneurship in the Region	Innnovation Chart of Alfândega da Fé; prototype
How can we create a favourable environment for the diaspora to invest in the territory?	Co-creation project: Attracting International Investment	Innnovation Chart of Alfândega da Fé; prototype
How can we make agriculture more efficient and sustainable?	Co-creation project: Innovation in Agriculture and Sustainability	Innnovation Chart of Alfândega da Fé; prototype
How can we ensure that health and social support services reach a dispersed elderly population?	Co-creation project: Dispersion of Users of Social Support Services	Innnovation Chart of Alfândega da Fé; prototype

8.5 RIC SIEHL in Rotterdam – The Netherland

The Rotterdam Impact Coalition (RIC) is an informal partnership of all relevant stakeholders in the agency 'Voor Goed'. Its collective mission is to foster collaboration among diverse actors to address the complex and evolving societal challenges faced by the city and its communities.

Recognising the need to further strengthen the local social innovation ecosystem and enhance its capacity to generate meaningful and sustainable impact, RIC seeks to engage mainstream businesses as active drivers of social innovation. By connecting businesses with public, social, and community stakeholders, the coalition aims to build stronger

partnerships, foster innovative solutions, and create lasting value for Rotterdam and its inhabitants.



Tabel 1: SIEHL in NEST project

SIEHL	Possible HE or VET programs related with SIEHL	Learning objectives for students on SIEHL	Activities in SIEHL linked to Education	Relation to ECTS	Description of learning within the SIEHL	Microcredials	Insights
Artevelde in Belgium			Research Project Practical placement / Internship Bachelor thesis		Meeting Pitch each 2 weeks Feedback session Works shops Application for the funding NETWORKS		
Eemsdelta in The Netherland	The activities are students learning in learning	The goal is to learn in a rich practice in which they develop both formal as	Learning community in the SIEHL in which students work	Depending on the education form. VET is	Every week in a learning community with all the students	Not yet	Relationship with the SIEHL is important!

	communities in the SIEHL. They come from both VET as HE, form is depending on their education. They work interprofessional in multidisciplinary teams together with professionals and rehabilitants on research assignments.	informal leaning skills. For example: teamwork skills; Solve real challenges; Project management skills; communication skills; meaningful learning; contribute on a sustainable healthcare; professionalism; learning and understanding other disciplines; contribute to (their own) region; critical thinking	together with the SIEHL on problems	part of their curriculum, HE also. Can be a project, internship, course			Projects need to be interesting for the students

HyMy Village in Finland	The activities are connected to the students' studies, either as part of compulsory or elective courses. Students have started this collaboration through the activities we do in community learning, or also as part of their bachelor's studies, or thesis. It can also be part of an internship or placement — so	The main goal is to bring meaningful activities to them. The subjects and themes arise from the participants' wishes and needs, and then we try, together with the students, to formulate activities that fit those needs.	So, we do different kinds of activities, and we call them services. They can be different kinds of low-threshold services where our active actors are students. Students collaborate with people in the community. It can be people in schools, families living in the housing area, or elderly people.	It can be anything from one credit to fifteen credits, depending on what the role of the assignment is	The students planned, executed, and analysed the whole process. After the interventions, there were also thesis students involved. They learn throughout reflection on what worked well and what could be improved, receiving feedback from participants.		

	practical learning.						
Inside-Out Bragança in Portugal	Extracurricular (elective) course unit Blended Intensive program	Acquire teamwork skills; Solve real challenges; Demonstrate project management skills; Demonstrate communication skills; Be aware of the reality of a depopulated area; Create future scenarios and apply different solutions to different scenarios. Create future-oriented solutions	Design thinking process for cocreate innovative solution for complex challenges. It includes. information gathering, field visits and immersion in the territory, brainstorming, ideation and innovation, future scenarios analysis, prototyping, solution validation, and pitch	6 ECTS 6 ECTS	Fieldwork visits in the SIEHL Meetings (online or face-to-face) Immersive week in the SIEHL Final presentation in the SIEHL	Not yet, but possible during the phase of challenges co-creation	

	Modules of curricular units	for real complex challenges		1-3 ECTS			
Rotterdam							

9. INSPIRING FORMAL EDUCATION NESTING INTO SIEHLS

The Challenge-Based Innovation (IBD) extracurricular unit is one semester elective unit with 6 ECTS where students develop activities integrated in *Inside Out Bragança*[1] SIEHL, in Portugal. This unit has also functioned as BIP.

The IBD extracurricular unit is one between many others extracurricular unit offered by Bragança Polytechnic University (IPB) for all IPB's students, as a part of a broader IPB program: "10%, up to you!". In this program, students can choose up to 10% of curricular units from his/her study plan to replace by one for another subject offered by IPB. Also, students can be replaced their elective units with these extracurricular unit from "10%, up to you!" program. If none of these options are possible, the IBD will be credited towards the diploma supplement. In this sense, formal recognition of the acquired skills is always guaranteed.

9.1 Program description

The IBD consists of solving complex challenges through a co-creative design thinking process, involving students, teachers, and local stakeholders. The challenge that students will work on are designed by the IBD's teachers and SIEHL's representatives. So, the co-creation process begins with the development of challenges, before the students are integrated into the process.

Considering that it is an extracurricular unit, where one of the premises is to have multidisciplinary teams to develop a project within the context of SIEHL. Any student can be involved, from any level of education—professional, bachelor's, master's, doctorate. So, students apply for IBD extracurricular units and, they are interviewed, selected, and assigned to a case to work on in multidisciplinary teams.

The activities for students are organized and supervised through a facilitation process, performed by IBD's teacher professors, involving a SIEHL's stakeholder. Activities include information gathering, field visits and immersion in the territory, brainstorming, ideation and innovation, future scenarios analysis, prototyping, solution validation, pitch, among others. The aim is to find an innovative solutions or new approaches for the complex

[1] Description about Inside Out Bragança .....

challenges, that they be future-oriented and in tune with the needs of SIEHL and the territory in which it immersed. Systematically:

1) Student's teams become aware of the case by contacting a SIEHL member;

2) Student's teams visit SIEHL to better understand the challenge and gather more relevant information;

3) Whenever possible, they meet remotely with a SIEHL member and IBD's facilitators (about one hour, once a week);

4) They develop co-creation activities during the semester, in online environment, and during an intensive and immersive week, physically at SIEHL;

5) They present the project to a broad audience, including SIEHL members.

9.2 Learning objectives

Formally, the "learning outcomes and competences" described in IBD's syllabus are: "at the end of the course unit the learner is expected to be able to:

1. Demonstrate teamwork skills in transdisciplinary, multinational, multicultural, and co-creation environments;
2. Solve real challenges or problems from the community (companies and institutions) requiring innovation and a variety of competences;
3. Demonstrate project management skills using milestones and focusing on user value and business value creation;
4. Demonstrate communication skills in front of a wide audience."

However, many more learnings can be gathered, such as:

For students: An understanding the reality of a sparsely populated area, creating future scenarios within a real-world context, and learning to apply different solutions to different scenarios…

For the professor: A better understanding of the territory that surrounds them and how this affects people's lives; thinking about concerted solutions based on the ecosystem and not on an individual problem; transforming innovative proposals into new challenges for the new students who follow...

For the SIEHLS: A broaden of their vision of their own territories and place them in the near future, considering how future generations will deal with complex problems, and to visualize solutions that can be implemented in their own contexts…

9.3 Relation to ECTS

On IPB, IBD extracurricular unit delivery 6 ECTS to student. This ECTS received can be replaced by an elective curricular unit or exchanged by a curricular unit integrated in the program "10%, up to you!". If none of these options are possible, either because there are no elective units in the curriculum or because exchange curricular unit is not feasible or approved, the IBD is always recognized in the student's diploma supplement.

For the IBD supervisor, the facilitation process is recognized as 2 hours/week of teaching classes.

9.4 Learning within the SIEHL

During the cocreation process, the students, in their teamwork, are asked to develop different tasks that makes them think about the problem and find innovative solutions or new approaches. All these tasks are upload in IPB co-creation project management platform, that can be consult in: https://cocriacao.ipb.pt/. In short, the activities are:

1) Kick-off team building
2) Context canvas
3) Fieldwork preparation
4) Empathy map
5) Intermediate pitch
6) Benchmarking solutions
7) Insights
8) Pestle analysis
9) Prototype solution
10) Validation in the context
11) Validation with future scenarios
12) Validation with experts
13) Creative pitch workshop
14) Daly assessment checkpoints in final immersive/intensive week
15) Final pitch
16) One page document
17) Final report
18) International Cocreation Conference Presentation

9.5 Bridging approach

In this extracurricular unit, the teaching and learning methods are described as “active learning methods, focused on the development of teamwork, using the digital and face-to-face collaborative tools”. Several teamwork’s activities are performed, together with the SIEHL’s stakeholders, in a parallel and collaborative way. A continuous assessment methodology is use based in a teamwork projects and qualitative assessment could be excellent. However, in IPB we should give a quantitative evaluation, and, for the IBD, the continuous assessment process is composed of three components:

- Self-assessment: everyone does a self-assessment considering their performance in teamwork;
- Peer assessment within team: everyone does a peer assessment, within the group, for each teamwork member;
- Peer assessment of teamwork: everyone assesses the final group projects;
- External evaluation: the final project is evaluated by an independent jury.

These evaluative elements are collected and final grade are calculated. The teacher, in their role as facilitator, and SIEHL member, in their role as partner, does not intervene in the evaluation of the students.

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