New Approaches for
Inclusive Informal Learning Spaces

Learning communities' co-creation framework

Project Result 4 - Learning communities for students, lecturers and university administrations

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NIiLS New Approaches for
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Content

Introduction

The learning space, whether it be a physical or a virtual environment, plays a crucial role in the education of students. It sets the stage for the learning experience and can greatly impact the effectiveness of the instruction. Traditionally, the design of university campuses has focused on conventional instructional methods and formal learning spaces. However, there has been a growing trend towards incorporating informal learning spaces into the campuses of higher education institutions. The availability and accessibility of informal learning spaces on campus can provide opportunities for informal interactions and social connections, which can foster a sense of community and belonging among the students. In addition, student belongingness has been shown to have a positive impact on affective commitment to the university and interpersonal relations (Allen & Meyer, 1990). However, it is not just the availability of informal learning spaces on campus that contributes to university belongingness and well-being of students. The design of these spaces also plays an important role. For example, the spaces that are comfortable, flexible, functional, have a good spatial hierarchy, open and have other support facilities can contribute to the well-being of students.

Based on outlined considerations the PR4 "Guidelines for the Identification of Examples, Case Studies, Concepts for Inclusive Informal Learning Spaces" of NIILS project builds on the findings of PR1 and preliminary results of PR2 and runs parallel to activities related to PR3. The objective of PR4 is to develop strategies on how to co-create and activate learning communities which address informal and non-conventional learning spaces. A strong interdisciplinary conceptual and methodological framework initiated by MRU and supported by all partners forms the core for achieving the result. This objective will be achieved through four interrelated tasks:

Task 1: Identifying examples / case studies / concepts for inclusive informal learning spaces;
Task 2: Learning communities' co-creation framework;
Task 3: Learning communities' pilot and guidance for implementing;
Task 4: Started learning communities in all partner countries.

Activities within this project results will be led by Mykolas Romeris University (MRU), but each partner will be involved and contribute to it significantly. This deliverable provides an overview of each completed task. It will be updated after the finalization of each task.

Deliverables and milestones

Following deliverables and milestones will be achieved in concluding the tasks:

- Criteria and template for best practice examples / case studies / concepts for inclusive informal learning spaces (English);

- Collection of best practice examples / case studies / concepts for inclusive informal learning spaces (English);

- Learning community's co-creation framework (English);

- 5 learning communities (1 x pilot plus 4 x started communities), one in each partner country, each with at least 10 members (total 50), including e.g. 5 students (thereof 2

students with fewer opportunities), 3 lecturers and 2 participants from university administration.

The output is innovative as it will create and validate the learning communities' co-creation framework. The innovation lies in the fact that such models do not currently exist. Results of PR4 are instrumental to the development of PR5. Besides this "internal" impact for the NIILS project, PR4 is also expected to produce impact for the co-created learning communities– not only partner organizations but also for the stakeholders who will be able to apply bets practice experience and theoretical co-creation aspects. The framework and strategies are poised to be immediately used in other contexts outside the NIILS project and potentially in other fields of education.

1. Case study analysis

1.1. Methodology

The goal of the case study analysis was to identify and describe good practice examples or concepts for designing, improving and/or adapting inclusive informal learning spaces (including outdoor spaces) form their institution, networks and region. Table 1 below details the steps for achieving this goal.

Table 1: The steps for completing the Task 1

Step	Description
Step 1: Definition of guidelines	MRU defines the guidelines and template for data collection based on initial literature analysis and expertise gained during previous project activities. The guidelines were presented and discussed during the 2nd project partner meeting.
Step 2: Guidelines sent to partners	MRU sends the guidelines for identification of the case studies.
Step 3: Partners conducting preliminary research	Each partner conducts preliminary research in line with the guidelines and identifies 1 case study which fits the criteria by 3rd of November 2022 monthly partner meeting;
Step 4: Discussion on preliminary findings	After discussion of the preliminary set of case studies and refinement of the data collection template, each partner identifies the remaining 2 case studies and sends to MRU by December 2nd 2022 meeting;
Step 5: Final preparation of the framework	Based on the identified examples MRU and existing research methodologies will develop a learning communities co-creation framework. The framework will be presented and discussed with all partners in the 3rd partner meeting.

Source: developed by project partners

1.1.1. Template for good practice examples/case studies/concepts

Template for good practice examples/case studies/concepts MRU provides criteria which all partners used in identification and description of 3 good practice examples, case studies or concepts for designing, improving and/or adapting inclusive informal learning spaces (including outdoor spaces) form their institution, networks and region, based on the preliminary results of PR1 (country context analysis) and PR2 (users' perspective analysis) and the data available from the first round of walking interviews in PR3 (mapping platform). Table 2 below provides an overview of the 3 key dimensions i.e. (1) Innovative practices of community design, development and/or management; (2) Diversity of participant/inclusivity in the learning community; and (3) Qualities of the learning space of the community. All of these dimensions are interrelated.

Table 2: Dimensions of the analysis

Dimension	Description	Examples of case studies
Innovative practices of community design, development and/or management	The use of innovative forms of community design and/or management. Including but not limited to: • Designed by community for community (engagement of the academics, students, technical and facilities staff); • Consultations with broader community of the university (e.g. those who live nearby); • Application of design thinking, codesign and other co-creation-based methods; • The management of the community is 'owned' by the members.	1. Mäkelä, T., & Leinonen, T. (2021). Design framework and principles for learning environment co-design: Synthesis from literature and three empirical studies. Buildings, 11(12), 581. 2. The Learning Communities Handbook by Newcastle University 3. Community design programme by CivicWell
Diversity of participant/ inclusivity in the learning community	Dimension focuses on case studies with physiological, cognitive and/or cultural diversity of the participants.	Toward Inclusive Learning Spaces: Physiological, Cognitive, and Cultural Inclusion and the Learning Space Rating System by Educause Review
Qualities of the learning space of the community	Focuses on innovative use of amenities and infrastructure. Including but not limited to: • The use of online tools (i.e. Internet has enabled many new forms of collaboration with students); • Diverse and agile spaces that are meant to foster collaboration, creativity, and wellness; • How the diversity aspects were addressed by the space.	Designing evidence-based library spaces for 21st century learning: case studies from Singapore by University of Melbourne Diversified learning: designing for equitable and inclusive learning spaces by EdMarket

The partners were tasked to find existing networks and initiatives, stakeholder communities, previous projects and best practice examples which match at least 2 dimensions outlined in Table 2. Such identification allows to understand what consortium partners consider a successful learning community (bottom-up definition).

The examples were selected from partner institutions, networks and regions, based on the preliminary results of PR1 (country context analysis) and PR2 (users' perspective analysis) and the data available from the first round of walking interviews in PR3 (mapping platform). The processes entailed the use of online search engines, databases, platforms etc. as well as professional network e.g. national (and European) project platforms, websites of related organizations and networks, local authorities and universities' associations. The bodies representing variety of stakeholder groups (higher education institutions, architects, city planners, facility managers and other databases related to learning spaces) were also consulted during the processes of case studies selection.

1.1.2. Case studies in the sample

Table 3 below provides a summarized overview of the collection activity by detailing the cases selected by the partners and the dimensions covered by each case. Further sections in this chapter provide in-depth description of each case study.

Table 3: The steps for completing the Task 1

#	Title	Partner	Dimensions covered		
			Community design, development and/or management practices	Diversity of participant/ inclusivity in the learning community	Qualities of the learning space of the community
1	**Arhitektuurikool case**	Mykolas Romeris University (Lithuania)	x	x	x
2	**The Millennium schools'**	Mykolas Romeris University (Lithuania)	x	x	
3	**Architectural Education project**	Mykolas Romeris University (Lithuania)	x	x	
4	**Informal Learning Youth Center**	Akdeniz University (Turkey)	x	x	x
5	**Dokuma Park**	Akdeniz University (Turkey)	x	x	x
6	**Özgecan Aslan Youth Office**	Akdeniz University (Turkey)	x	x	x
7	**Learning islands at Campus Treskowallee**	HTWB (Germany)	x	x	x
8	**Blue & Red Salon at Campus Wilhelminenhof**	HTWB (Germany)	x	x	x
9	**Self-organized (il)legal learning spaces at Campus Wilhelminenhof**	HTWB (Germany)	x	x	x
10	**MAXXI – Museo Arte XXI secolo (Museum of XXI century art)**	Sapienza (Italy)	x	x	x
11	**Museo arte classica Sapienza**	Sapienza (Italy)	x	x	x
12	**MACRO – Museo Arte Contemporanea Roma**	Sapienza (Italy)	x	x	x
13	**Campus greening**	UWK (Austria)	x	x	x
14	**ÖH-Lounge**	UWK (Austria)	x	x	x
15	**The awakened space**	UWK (Austria)	x	x	x

Source: developed by project partners

1.2. Results

1.2.1. Lithuania: research methodologies and good practice examples

Case #1 Arhitektuurikool

The School of Architecture is the only school in Estonia offering education in the field of space. They are paying attention to the design of informal learning spaces and leading the movement in Northern Europe and the Baltics.

Community design, development and/or management practices

The School of Architecture was born thanks to architects who, in addition to their main work, have been looking for ways to increase spatial awareness. They have created innovative learning space, where primary school students, elementary school youth, high school students, adults and lecturers can meet and learn. It can be defined as an example of design by the community of architects for community (engagement of the academics, students, adults).

The School of Architecture is encouraging its community to organize different projects. The School Space (Kooliruum) project, which is organized by the students and has become a tradition, gives young people the courage and enthusiasm to experiment with real building materials and real tools to realize their spatial dreams. At the camp, active architects, interior architects or landscape architects help to think about creating a spatial experience.

The project School Space is also an example mixing of project- and problem-based learning, where students all over Estonia use various scientific and design methods to explore the nature of school today and to create a vision for a new school formal and informal learning space.

Diversity of participant/inclusivity in the learning community

Primary school students, elementary school youth, high school students, adults and lecturers are the main participants of this innovative learning space. Ensuring the accessibility of pathways and equipped places is the main aspect of inclusivity.

Qualities of the learning space of the community

The School of Architecture focuses on innovative use of amenities and infrastructure, paying attention to the use of online tools. For example, a project named Explore Space! (Uuri ruumi!) is a web-based collection of free educational activities on architecture for general education schools that can be integrated with other subjects. Architecture is a great platform for combining the know-how from different fields in a practical manner and understanding a vital part of our everyday life. The collection of online activities promotes and facilitates the teaching and learning of the basics of architecture and built informal learning space environments in general education schools, but also offers methodical variety – activities for diversifying daily learning. In the context of designing learning spaces, they share a vision of sustainable development.

Case #2 The Millennium schools', Lithuania

The aim of the Millennium schools' is to create integral, optimal and high standard conditions for learning and elimination of achievement gap in every municipality of Lithuania. Vision of the program - every child in Lithuania has the opportunity to study in an open and modern school. A consistent, gradual modernization of all Lithuanian schools.

Community design, development and/or management practices

Ministry of education, science and sport, Lithuania are struggling with the adoption of special education environment to the contemporary needs of students: "We are creating rules, we are organizing EU funds, but when visiting sites after funding periods, none of the goals are achieved". The goal of this program is to eliminate the achievement gap and create integral, optimal and high- quality education settings in every municipality of Lithuania.

Diversity of participant/inclusivity in the learning community

Main elements of school performance improvement: cultural/creative activities integrated into formal education, created and implemented with cultural partners, inclusive education. The program incorporates three stakeholder groups: (1) millennium schools' academy; (2) municipalities; and (3) schools.

Case #3 Architectural Education project, Lithuania

The architectural Education project, implemented since 2014, is now already finished (5 kindergartens, 7 schools were participating in this project.

Community design, development and/or management practices

Workshops in schools and kindergartens were organized – pupils presented, how the informal environment should look like. The same workshops were organized with the lectures, parents, and people from surroundings. All ideas were given to the architects. The lack of multifunctional spaces was noticed (spaces for acting together, meeting each other) during the activities.

Diversity of participant/inclusivity in the learning community

Who were included in the project: (1) Vilnius academy of arts: concept/ curation/ students/professors; (2) Architecture offices (Inblum, DoArchitects, Aexn, A2SM, Wall, Processoffice, L. Tuleikis+co); (3) Communities of kindergartens and schools (e.g. pupils,

lectures, administration, parents); (4) Municipalities; and (5) Educators, psychologists, politicians.

1.2.2. Turkey: research methodologies and good practice examples

Case #4: Informal Learning Youth Centre (YAŞÖM)

Picture source: YAŞÖM, 2023

YASOM is a social enterprise where young people learn from each other, experience life and share. Informal Learning Youth Centre developed projects with the philosophy of learning has no place, time and age. YASOM was founded by a group of young people mentored by Hulya Denizalp in 2011. The centre was built up to raise awareness on "*learning by experience*" and create an open space for young people to develop activities in accordance with their own wishes and needs. YASOM hosts a large number of projects that are related to environmental awareness, volunteering, and inclusion.

All activities at YASOM are organized by young people between the ages of 18-30. To date, peer education model on 151 different subjects; personal development and hobby workshop; 8 speaking clubs; It hosted many different events and projects, including 7 social support projects. The centre has made more than 50 partnerships at national and international levels and has won 13 different prizes with its projects.

Community design, development and/or management practices at YASOM

This centre has won the "Changemakers" project competition, which is organized annually by the Sabancı Foundation and supports the winning projects. The centre's management, development, selection, planning and execution of workshops and learning activities are done by volunteers. Most of the volunteers are university students. The Informal Learning Youth Center has about 150 active volunteers.

*Diversity of participant/inclusivity in the learning community*

In terms of inclusivity, although the main target audience is young people, activities are open to everyone, and anybody may benefit from all YAŞÖM workshops free of charge. Thus, it can be said that the centre is inclusive, regardless of gender, disability, age, educational status or economic conditions. Moreover, there are young people from different countries within the centre. Foreign volunteers both teach their own language and culture and learn Turkish culture. YAŞÖM volunteers are in the coordination team "East-West Camp" where participants all corners of Turkey with international participants from China to Canada. East West Camp has been bringing together young people from all over the world, who have been

working in volunteer projects in their localities and have taken a step towards their place of residence.

Qualities of the learning space of the community

Basically, YASOM uses different places for their activities. Workshops are held both indoors and outdoors. The main hall they used for their indoor activities is a multi-purpose area that can be converted for different activities such as drama, music, yoga, lecture etc. Although the center is not very big, the furniture is mobile, light and ergonomic and suitable for multi-purpose use. There is a small stage for various activities. The lighting in the hall is adequate. It is also equipped with technology. They also use online education tools to meet and organize the activities and some of the trainings are provided online.

Case #5: Dokuma Park
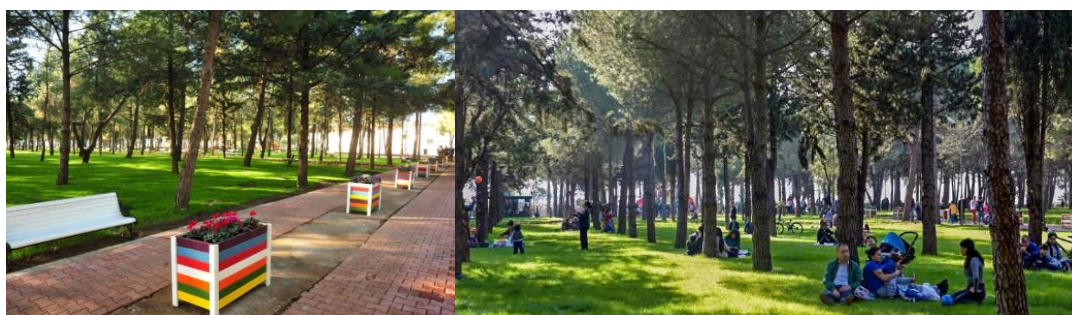
Antalya Pamuklu Dokuma Sanayi Türk Anonim Şirketi was established on April 3, 1955, in this area. The factory, which was initially established as a result of the partnership of Sümerbank, Antbirlik and some banks, started production on October 1, 1961. The operations of the factory were stopped on 13 January 2003 on the grounds of loss. The Factory Area was transferred to Kepez Municipality in 2004 by the Privatization Administration.

Community design, development and/or management practices

With the contribution of Antalya's dynamics, an initiative was initiated under the leadership of the city's common mind. For this purpose, it was considered to form a working group to prepare an idea project about what to do in the park area, and within this framework, it was decided to form a working group in the Municipal Assembly. In the working group, one representative from the parties that have a group in Kepez Municipality Council, two representatives from Antalya Chamber of Architects, Antalya Chamber of Civil Engineers and Antalya Chamber of Landscape Architects, Antalya Chamber of Commerce and Industry, Antalya Commodity Exchange and Antalya Union of Chambers of Craftsmen and Artisans, and Akdeniz University Faculty of Fine Arts Dean's Office. one representative was included.

The Working Group developed an idea project for the preservation of the buildings in the park area, the restoration of the existing landscape and plant tissue, together with the buildings, and to impose new functions on the area. The people of Antalya who have an opinion on the subject have prepared it in consultation with non-governmental organizations and professional chambers.

Diversity of participant/inclusivity in the learning community

This park is open to the public and there are 18 different (indoor and outdoor) spaces including libraries, museums, green areas, auditoriums and a science center with lots of workshops for

children. Especially Cemil Meriç Library (indoor) and Forest Library (outdoor) are commonly used by university students and newly graduated students who are preparing for exams.

Qualities of the learning space of the community

In the interior design of the new spaces created, attention was paid to the partial preservation of the old architectural features and features related to heat, light and ergonomics, and stylish and comfortable furniture was preferred. Attention was paid to the number sockets and internet access both indoors and outdoors.

Case #6: Özgecan Aslan Youth Office

Youth Centers are helping young people to make use of their free time, directing young people to social, cultural, artistic, scientific and sports activities, contributing to the personal, social and spiritual development of young people, providing guidance and counselling to young people, raising awareness of young people against harmful habits and enabling young people to gain social skills by taking part in various activities. They are centers that carry out various activities to enable them to share and share, and organize historical and cultural trips, camps and sports activities.

Community design, development and/or management practices

Both Özgecan Aslan Youth Office (In campus) and Özgecan Aslan Youth Center (Of campus) are official institutions affiliated to the Ministry of Youth and Sports. However, students and other young users are part of the decision-making process. Students have a say in which courses will be opened or which activities will be carried out. Volunteered students can offer courses and teach others. They can also carry out voluntary projects. Both places have study rooms that students can use for focused and collaborative learning activities. They also took part in the design and decoration of the space.

The spaces have kitchen and equipment for the users. They have free tea. They may use the fridge and other equipment as well. Sometimes, especially during final exams and Ramadan, benevolent people distribute meals for students. They used outdoor spaces for their activities. For instance, they used the garden for gardening projects, and they gave the products to charity.

*Diversity of participant/inclusivity in the learning community*

The places are designed for wheelchairs and other disabilities. Moreover, immigrants and disadvantaged youth can take part in the activities free of charge.

Qualities of the learning space of the community

Özgecan Aslan Youth Office is located under a mosque and the day light is limited. Moreover, it is hard to heat the office. On the other hand, the furniture and other infrastructure were sufficient. There is wi-fi yet the plugs are not sufficient. They have access to most of the materials needed for educational activities. They have musical instruments, fine art materials and sport equipment in the centre.

1.2.3. Germany: research methodologies and good practice examples

Case #7 Top-down project Learning islands (Lerninseln) at Campus Treskowallee, (A building)
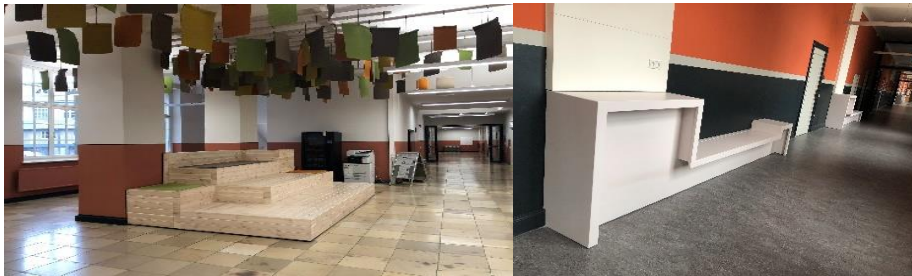
Community design, development and/or management practices

This project was initiated by the chancellor to attract students and to improve the campus Treskowallee as a learning environment. Due to the lack of vacant rooms, the aim of the project was to activate interim spaces, like entrance halls and floors. The conception and realization were done in collaboration with an architectural office. The management of these places is owned by the university administration.

Diversity of participant/inclusivity in the learning community

Designed by decision makers for the community. Due to the initiation and realization by the decision makers (university management) and the lack of participation processes by users, this project can be classified as a top-down-project. The intensive use of these learning environments by students indicates that the university management understood the lack of informal learning spaces and the need to establish attractive places on campus. Cultural diversity of participants: These places are open to students, as well as staff and guests of HTWB.

Qualities of the learning space of the community

Diverse and agile spaces that are meant to foster collaboration, creativity, and wellbeing. The high quality of used materials, the design of the places, the integration of multiple power outlets, and the location at highly frequented spots attract many students and make these places a vivid informal learning environment.

Case #8 Top-down-bottom-up-project Blue & Red Salon (Blauer & Roter Salon) at Campus Wilhelminenhof (B building)

Community design, development and/or management practices

The student union is centrally located on the main campus Wilhelminenhof. In the B building on the first and second floor are offices, storage rooms, a small cafeteria and two event rooms located. The event places, red and blue salon, were designed and equipped by the student representatives to allow a 24/7 open and multifunctional space for learning, relaxing, meeting and celebrating. It is possible to make a reservation for special (student) events.

The conception and realization were done by the student representatives. It can be assumed that the process of usage, and therefore, the equipment, is not completed but an ongoing process according to the users' changing needs. The management of these places is owned by the student union.

Diversity of participant/inclusivity in the learning community

Designed by the community for the community. Due to the initiation, realization and operation of these places by the student union, this case study can be classified as a top-down-bottom-up-project of enablers. Student representatives cover both sides of decision makers and users. Cultural diversity of participants: These places are open to students from all faculties of HTWB.

Qualities of the learning space of the community

Diverse and agile spaces that are meant to foster collaboration, creativity, and wellbeing. These two places are equipped with mostly second-hand furniture and accessories, which leads -from a design perspective - to a more unorganized and mixed-up atmosphere at first sight. Due to the use by students only and under the supervision by their peers in the student representatives, this place allows students to (re)arrange the environment according to their needs, like learning in silence, working in groups, partying, preparing student events, etc. Therefore, the two salons are always arranged differently.

Case #9 Bottom-up-project Self-organized (il)legal learning spaces at Campus Wilhelminenhof (i.e., F building)
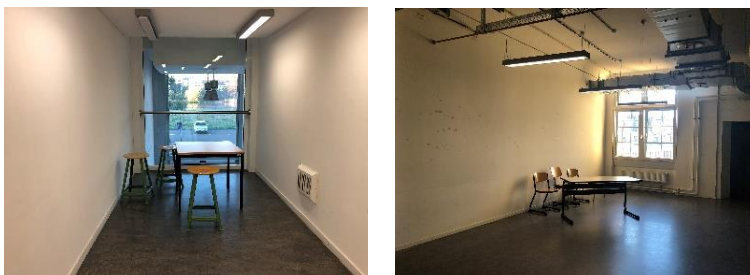
Community design, development and/or management practices

Due to the lack of informal learning spaces for collaborative learning processes at campus Wilhelminenhof, it can be observed that during the semester several self-organized learning places are evolving. Students are carrying tables and chairs from formal learning spaces (i.e., seminar rooms) to corner places in the floors to establish places where they can hang out together.

These places disappear regularly; probably when the administration discovers and dissolves them. An interesting fact is that the administration, university management, or student union, never took the chance to reconsider these empty and (mostly) unattractive places and organize a legal place for collaborative learning activities close to the formal learning environments (which could also be used as breakout spaces during lectures). The management of these places is owned by students (and not tolerated by the administration).

Diversity of participant/inclusivity in the learning community

Designed by the community for the community. Cultural diversity of participants with limitations: Due to the self-organizing process at open accessible places, these learning environments could be used by all students and/or people who pass by. But it is obvious that mostly students of the faculties/study programs, which use the adjoining seminar rooms, occupy (and probably establish) them.

Qualities of the learning space of the community

Diverse and agile spaces that are meant to foster collaboration, creativity, and wellbeing. These places can only be seen as a less-than-ideal solution. The spatial and technical quality (light, acoustic, privacy, missing power outlets, WIFI quality, etc.) and the quality of the furniture is very poor. It clearly shows the immense lack of collaborative places on campus and the pressure of students to self-organize these kinds of places to support their needs besides formal learning processes during lectures and seminars.

1.2.4. Italy: research methodologies and good practice examples

Case #10 MAXXI – Museo Arte XXI secolo (Museum of XXI century art)

MAXXI is a national museum of contemporary art and architecture in the Flaminio neighborhood of Rome, Italy. The museum, designed by Zaha Hadid is managed by a foundation created by the Italian ministry of cultural heritage.

Community design, development and/or management practices

MAXXI, which was designed as a vast cultural complex, is run by a Foundation that was established in July 2009 by the Ministry for Cultural Heritage and Activities under the leadership of Giovanna Melandri. The sequence of events represents MAXXI's goal as a center for cultural experimentation and innovation, for the exploration, development, and study of

our time's aesthetic contents. This aim is evident in its position as a repository for collection preservation and presentation, as well as a nexus for cultural experimentation and innovation. MAXXI design provided some workstation in the cafeteria (linear workstation for individual study or circular tables for collaborative study), and it also provided decorative and sound-absorbing elements on the ceiling to absorb noise, especially a large fluid space with several functions. In the building there is a library with access for students. There are several different aspects of MAXXI that offer the public different services/opportunities to engage with the site, such as:

- **Architecture MAXXI.** MAXXI Architettura is Italy's first national museum of architecture, with its character defined by the country's cultural and physical surroundings.
- **MAXXI MAXXI ARTE**. A modern museum situated in unconventional architecture; the beginning points for an unconventional museographic experience.
- **Education, Research, and Training at MAXXI**. This is a workshop where the general public may examine, investigate, and understand modern creative phenomena using avant-garde facilities and equipment.
- **MAXXI Construction**. This department comprises several offices and functions. It promotes and disseminates MAXXI's multifaceted nature and plethora of activities, and it promises to integrate private money with public resources to give a diverse cultural offering.

The MAXXI building, designed by Zaha Hadid and located in Rome's Flaminio area, is a renowned architectural masterpiece with unique and dramatic shapes.

Diversity of participant/inclusivity in the learning community

- Frequented by architectural students and freelance workers.
- Visiting researchers (e.g., as part of conferences).
- Open to the general public.

Qualities of the learning space of the community

- Adopts a top-down process.
- Create Communities/meet point.
- Focused studies and collaborative work.
- Cultural activities and exhibitions, which are integrated into formal education (e.g., within the university curriculum/practices), curated exhibits and events with cultural and educational partners.
- Offers a culturally rich environment to study and collaborate in

Case #11 Museo arte classica Sapienza (Museum of classic art at Sapienza)

An interesting place of study, where plaster casts of Greek sculptures from the Archaic period to Hellenism can be seen.

Community design, development and/or management practices

After teaching archeology and art history at La Sapienza since 1889/1890, Emanuel Löwy founded the La Sapienza "Plaster Museum" to collect casts of Greek sculptures, originals, and Roman copies, modelled after university plaster cast libraries that had become indispensable teaching and research tools in Europe, particularly in Germany. The museum's core was created in three apartments on Testaccio's Via Luca della Robbia and was handed over to the Istituto S. Michele in 1925, thanks to Löwy, who oversaw it until 1915.

Diversity of participant/inclusivity in the learning community

- Frequented by Sapienza students and lectures
- Open to the general public.

Qualities of the learning space of the community

The size of the place, its quietness and its beauty made many students go there to study either alone or in company. The university at first was reticent about this change, but over time it understood the needs of students and decided to equip the space. But not just that, a space was born that is partly self-managed by communities of students and lectures who meet to explore topics outside of the traditional lectures. In these spaces, in-depth study of art is often organized by students themselves, in a place where they can touch the objects they are studying. The space was upgraded by Sapienza with projectors, tables, and new adaptations of the electrical system to allow more students to use a computer. The space is also frequented by students from different faculties, not just art history or archaeology students. This promotes exchange and collaboration between different fields of study as well. Created for Collaborative studies*.

Case #12 MACRO – Museo Arte Contemporanea Roma (Contemporary art museum of Rome)

MACRO is a municipal contemporary art museum in Rome, Italy.

Community design, development and/or management practices

The development of MACRO began in the late 1990s on the former Peroni Brewery site. The museum ultimately opened on October 11, 2002, after an initial phase of refurbishment that permitted the inauguration of six rooms in September 1999. The museum has also undergone a MACRO Future extension since 2003, which includes two refurbished 1,000-square-meter buildings in Rome's historic slaughterhouse area of Testaccio.

A multifunctional space had been planned in the cafeteria, with some work and study stations available to users. Over time, many artists or simply creative people who frequented the place to work or study proposed that the museum set up the spaces with artistic and functional works, outside the canonical exhibits, with which users could interact and which users could modify or integrate as they pleased. The museum accepted this proposal and decided to create a space called "for preventive imagination," deciding to let visitors free to bring out his or her imagination with the 'goal of breaking down the sense of separation usually communicated by a museum.

Those who manage the museum say that a new way of learning has been born, namely unlearning, meaning that the museum itself transformed into a place to reflect, to experience, but also to study and question contemporary artistic production concerning heterogeneous content and improvisation. The space is also open to Meetings and conference suggested and organized by the museum or by users.

Diversity of participant/ inclusivity in the learning community

- Frequented by of all ages, freelance worker, artists
- Open to the general public

Qualities of the learning space of the community

- Bottom-up and top-down approach
- Create Communities/meet point.
- Focused studies and collaborative work.
- Offers an educationally stimulating and inspiring environment that consists of many different levels (floors) of historical collections that students can explore.

1.2.5. Austria: research methodologies and good practice examples

Case #13 Campus greening - Good places for meeting, inspiration and learning for humans, plants and animals in climate change

The outdoor space at the campus of the UWK is currently being redesigned with the aim to create new places and opportunities for exchange and different campus activities, including outdoor teaching and learning. At the same time, biodiversity and climate resilience at the site are to be improved while ensuring a high quality of use and efficient outdoor space management. To reach these goals, the project was developed in an inter- and transdisciplinary way with an inclusive and participatory approach. At the moment, the first part of the project is being implemented, although the full implementation including outdoor furniture is uncertain due to budgetary reasons.

Community design, development and/or management practices

In 2019 a group of students from the MSc program "Ecological Garden and Green Space Management ÖGGM 04" at the UWK analyzed selected areas of the campus and developed a concept for redesigning the campus outdoor space, taking into account the objectives and aspects mentioned above. Under the coordination of the ÖGGM course manager and the Sustainability Task Force of the UWK, the students' concept was evaluated for feasibility and further developed by a transdisciplinary working group, using workshop settings and collaborative online tools (Mural).

Diversity of participant/inclusivity in the learning community

The working group by which the students' concept was further developed in a co-creative approach involved researchers from different disciplines, lecturers, a faculty dean, university administration, facility managers, landscape planners and architects, as well as representatives of the students' union, the building owner and the operating company. Aspects of inclusivity were mainly considered with regards to accessibility and barrier free design, e.g. by ensuring the accessibility of pathways and equipped places and furnishing with wheelchairs or by consideration of different user needs in the selection of outdoor furnishing (e.g. benches with backrest, etc.).

Qualities of the learning space of the community

The outdoor spaces created in this project aim to provide a "good climate for an inspiring learning space" by offering the following qualities, among others:

- high quality of use (furniture, shading, wind protection)
- good accessibility and barrier free design
- efficient outdoor space management

environmental sustainability (biodiversity and resilience to climate change)

Case #14 ÖH-Lounge

The ÖH-Lounge is a furnished working and studying area located in the center of the historic building of the UWK provided by the students' union. It is freely accessible around the clock for UWK students and designed to be barrier-free.

Community design, development and/or management practices

The ÖH Lounge was created in 2019 on the initiative of the ÖH team (Austrian students' union) at the UWK in an area that was previously used for the storage of discarded furniture from seminar rooms. When the ÖH team noticed that this room and the furniture were regularly used by students for various activities, they responded to the need and developed the idea of setting up a lounge and communication area there for students without any obligation to consume. The ÖH team, the division for infrastructure and the facility management team of the UWK and the FM-Plus, which is responsible for the provision and management of building infrastructure for the UWK, were involved in the planning and implementation of the ÖH-Lounge.

Diversity of participant/inclusivity in the learning community

Before starting the planning process, the ÖH team interviewed students who used the space over two months, to determine the spatial and equipment requirements.

Qualities of the learning space of the community

Both individual and collaborative workstations are offered:

- 2 individual workstations
- 1 collaborative workstation with 6 seats
- 1 collaborative workstation with 5 seats and flipchart and blackboard
- Walls are designed as pin boards
- Power supply
- Hot drinks machine in the immediate vicinity
- Sanitary facilities in the immediate vicinity

Case #15 The awakened space
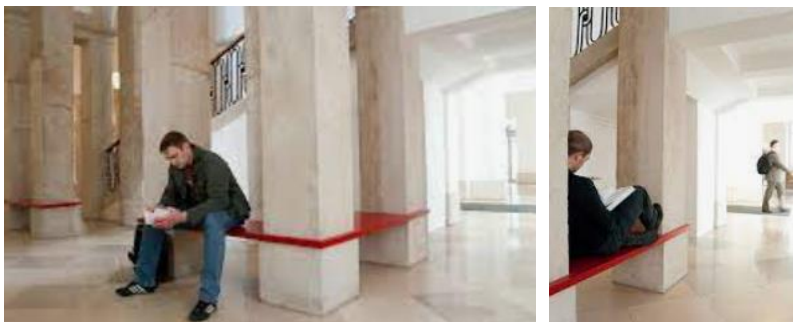
This project, which was carried out as part of a design course for architecture students by the department for spatial design in winter semester 2008/09 at the TU Wien, focused on the identification of spatial potential of intermediate and transitional spaces at the TU Wien and their utilisation for learning, collaboration and communication activities.

Community design, development and/or management practices

As part of the design course students explored the spatial and creative potential of existing "residual spaces" indoors and outdoors at the TU Wien, such as foyers, corridors, staircases, courtyards, etc. and developed different scenarios of use. Under the supervision of an interdisciplinary team of lecturers (experts from the fields of architecture, lighting design, spatial design, material use and processing, etc.) and in cooperation with representatives of the Federal Real Estate Company (BIG), the Buildings and Technology Department (TU GUT) and the Facility Service Team of TU Wien, a total of seven design measures and installations were developed in several rounds of presentations and discussions. The implementation on a scale of 1:1 was carried out by the students in self-construction under the supervision of members of the teaching team.

Diversity of participant/inclusivity in the learning community

The implemented measures were developed by more than 20 students in a co-creative process and were in generally accessible areas at the university campus. They were reactions to the basic needs of students during their time spent on campus between, before and after classes, like retreat areas, storage surfaces or seating for breaks, conversations and individual or collaborative activities.

Qualities of the learning space of the community

The implemented measures turned existing interstitial and transitional spaces into new non-conventional and creative sites for inspiration, communication, orientation, learning and collaboration.

1.3.   Analysis of the results

Fifteen purposively sampled case studies were selected and analyzed to improve the theoretical model. Table 4 below provides an overview of the elements identified during the analysis. It is important to note that the goal was to identify a diversity of elements and not their quantity.

Table 4: Links between the dimensions of analysis and case studies

Dimension	Description	Elements identified during the case study analysis
Innovative practices of community design, development and/or management	The use of innovative forms of community design and/or management at the campus (e.g. designed by community for community, stakeholder consultations, design thinking).	Focus on common interest of community (CS1) Passion with the topic by initiators (CS1) Project- and problem-based learning (CS1) Clear vision on desired impact (CS2, CS3, CS6) Learning by experience (CS4) Led by volunteers (CS4) Establishment of a working group (CS5) Consultations with stakeholders in the design phase (CS5)

		Students and other young users are part of the decision-making process (CS6) Professional architects involved (CS7) Designed by decision makers for the community (CS7, CS10, CS12) Designed by the community for the community (CS8, CS9 Supervision by peers (CS8) Self-organization and self-management (CS9, CS11) Students' concepts were evaluated by expert group (CS13) Collaborative workshops and online tools in designing phase (CS13) Interviews with students before designing (CS14) Part of curricula (CS15)
Diversity of participant and inclusivity in the learning community	Dimension outlines the elements of learning community allowing physiological, cognitive and/or cultural diversity of the participants.	Students from different levels of tertiary education (CS1) Engagement of broader stakeholder groups (CS2, CS3) Activities open to everyone (CS4) Free of charge for immigrants and other socially vulnerable groups (CS6) Open to all members of community (CS7, CS8, CS9, CS10, CS11, CS12, CS13) Accessibility (CS13, CS14) Student led (CS15)
Qualities of the learning space of the community	Design of innovative amenities and infrastructure for learning communities (e.g. online tools, agile spaces)	Use of online tools in facilitating the teaching and learning (CS1, CS4) Sustainability (CS1, CS4, CS8) Use of pop-up/temporary spaces (CS1) Combination of indoor and outdoor spaces (CS4) Development of a vision for multiple places in one campus (CS5) Preservation of historical elements (CS5, CS12) Culturally rich environment (CS10) Availability of leisure activities at the spaces (CS6, CS10) Use of interim spaces (CS7) High quality of used materials (CS7, CS13) Re-arranged based on the needs of the users (CS8) Multifunctional space (CS12) Efficient outdoor space management (CS13) Barrier free design (CS13, CS14) Existing empty spaces transformed into something useful (CS15)

The knowledge gained through the collaborative case study collection activity was used in design of the learning communities' co-creation framework described in Section 2.

2. Learning communities' co-creation framework

2.1. Traditional learning vs. co-creative learning communities

In this era of radical change, there is a pressing need to rethink how we approach learning and education. We must find new and innovative ways to enhance people's capacity to learn and engage with the complex challenges facing society today. In addition, the COVID-19 pandemic has had a significant impact on the educational environments of universities worldwide. Overall, the crisis has presented many challenges, but it has also accelerated the adoption of digital technologies and has shown the potential for more flexible and remote learning. The studies analyzing the effects of the pandemic (Baticulon et al., 2021; Kapasia et al., 2020) show that the lack of convenient learning places has been a barrier for students to participate in learning activities. The research also has highlighted the digital divide issues, and the need for more equity in access to technologies and internet for students and lectures (Lai & Widmar, 2021; Jaggars et al., 2021). By focusing on learning as the central pillar, we can create a more effective and sustainable model for education that empowers individuals and organizations to navigate the complexities of our rapidly evolving world.

There is a growing body of literature that recognizes the advantages of collective human actions in addressing the outlined challenges. People can have more insights and social experiences when they collaborate in groups and can achieve better results than any single individual. Recent societal and technological developments drive the need for broader and more direct forms of engagement. Opportunities for dialogue, deliberation, and creativity are transforming the culture of participation. De Lange & De Waal (2013) conclude that use of new media, technologies and collaborative methods promise several qualitative shifts in the way individuals are engaged and empowered: (1) collective issues can be defined and made visible more efficiently (e.g. use of big and open data); (2) engagement using collaborative technologies and social media allow citizens to feel as a part of something bigger; (3) media technologies empower self-organization when solving collective issues; and (4) media technologies allow individuals to act in new ways (e.g. design certain features of their cities or collectively govern urban issues). Table 5 provides a comparison between traditional learning and co-creative learning communities.

Table 5: Comparison of traditional approaches to learning and learning in co-creative learning communities

Traditional approaches to learning	*Co-creative learning communities*
Institution-focused learning driven by cognitive education and passive involvement of students (e.g. listening to lectures, memorizing the contents)	Learner-focused education driven by experience-based forms and proactive engagement
Learning prepares the students for professional level	Learning blended at the personal, social and professional levels
Learning occurs within formal environments	Learning occurs across the spectrum of informal and formal environments e.g. workplaces and public spaces
Learning is governed through top-down approaches	Learning is governed through an interaction between intentionally diverse and inclusive groups of stakeholders

As you can see in Table 5 above co-creative learning communities are particularly different to that of the educational system as they are diverse, dynamic and evolving, connecting learners and community to foster individual and collective capacity. According to Matthews (2016), co-creative learning means learning that is created with input and participation from both students and lectures as opposed to traditional approaches where students were required to be only passive recipients of knowledge. Co-creation is a process where multiple stakeholders come together to actively participate in the design and development of a space (Storey, 2015). When students are engaged and share responsibility for their learning, they build key competencies such as analytical, collaborative, and reflective skills. Hence, we argue that co-creation can be used in design and management of learning spaces by treating students and other university's stakeholder groups as active, creative, decision-making equals rather than passive recipients of top-down design. The following sections detail what enables the co-creative learning communities as noted during the analysis of case studies (Section 1) and literature review of rapidly expanding research field of co-creation of learning spaces in higher education.

2.2. Enablers of co-creative learning communities

The review of literature allowed us to identify three broad groups of conditions influencing the co-creation of learning communities: process, participants and resources.

2.2.1. Process

The process refers to the methods and practices which help to execute the learning community in a co-creative way. More specifically, this section investigates the inclusive planning principles, design prototyping, collaboration, action-oriented research, engaging storytelling and other co-creative principles of community building.

- **Shared vision.** To ensure diversity among the actors of the learning community and encourage them to actively participate in its activities, it is important for the actors to seek shared values and have a clear vision. The analysis of case studies underlined that successful learning communities focus on common interests of the community (CS1) and have a clear vision of desired impact (CS2, CS3, CS6). In this regard, the university can involve stakeholders in defining the purpose and goals of the learning community through establishment of working groups, surveys, focus groups, or town hall meetings, where stakeholders can share their ideas and suggestions. When stakeholders are involved in defining the purpose and goals of the community, they are more likely to be committed to the process and feel a sense of ownership and responsibility towards achieving the shared vision (Lundström et al., 2016; Mäkelä & Leinonen, 2021). This can help foster a sense of belonging and motivation to actively participate in the learning community's activities. Ultimately, co-creative learning communities have the potential to drive positive social change by empowering individuals and communities to work together towards shared goals and a shared vision for a better future.
- **Consistent and dynamic communication**. Luoma-aho & Halonen (2010) argue that communication is a key process supporting knowledge creation by a network of actors. The dynamic dialogue stipulates sharing of experiences which in turn leads to greater co-creative potential (Tchorek et al., 2020). Open communication increases awareness and diminishes resistance from the stakeholders (Tabarés-Gutiérrez et al., 2020).

Dobers and Stier (2018) suggest a focal enabler here are the communication skills in how to adjust information and vocabulary depending on the target group, context and purpose of co-creative activities. Consistent communication provides a common language between interacting actors and strengthens their relationships (Frow et al., 2016). The development of a common language, however, requires time and an open climate between the potential co-creators (Dobers & Stier, 2018). In similar vein, Vanichvatana's (2019) research emphasized the importance of considering students' preferences when managing facilities that support informal learning on university campuses. According to the researcher, if universities do not do this, students will choose to use informal learning spaces located off-campus.

The case study analysis revealed a variety of communication forms employed in successful learning communities i.e. Consultations with stakeholders in the design phase (CS5), experience-based learning (CS4), project- and problem-based learning (CS1), design by decision makers for the community (CS7, CS10, CS12), design by the community for the community (CS8, CS9), self-organization and self-management (CS9, CS11), organization of collaborative workshops and online tools in designing phase (CS13), conducting interviews with students before designing (CS14) and other (see Table 4). The variety of approaches noted during the analysis shows that there is no one method fit for all learning communities. As West and Williams (2017) note the term "learning community" is contested in higher education, with no two groups sharing the same definition. For some, learning community can been defined by a space for understanding, sharing, and facilitating best practice (e.g. Tosey, 2006). Whereas, for others, a learning community is the act or process of working collaboratively (Davies et al., 2005). Hence, successful communication requires careful examination of the context and participants of the learning communities.

- **Feedback mechanisms**. For communities to learn and adapt, the feedback process is crucial (Chandler et al., 2019). The adjustment of certain key factors may have a lasting and effective impact on the community and its stakeholders. According to Roundy et al. (2018) the quantity and quality of feedback determine the overall effectiveness of the community due to the mutual interdependence of actors. By regularly gathering and analyzing feedback from all stakeholders, these communities can identify areas for improvement and make necessary adjustments to their processes and goals. This can help to ensure that the community remains relevant, effective, and responsive to the needs of its members and the broader social context. Additionally, feedback and monitoring can help to build trust and mutual understanding among community members, creating a culture of openness and collaboration that supports ongoing learning and growth.

2.2.2. Participants

The enablers related to the participants refer to the key stakeholders, their roles and relationships during the co-creation and learning process.

- **Diversity of actors involved**. The authors (van Merrienboer, 2017; Lundström et al., 2016; Kaminskiene, 2020) suggest that the diversity of actors in the co-creation of learning spaces is essential for several reasons: (1) Variety of perspectives. When people from diverse backgrounds come together, they bring with them different experiences, knowledge, and perspectives. This diversity can lead to a more nuanced

and comprehensive understanding of the learning space, which can help create a more inclusive and effective learning environment; (2) Representation: When a diverse group of actors co-create a learning space, it ensures that everyone's needs and interests are represented. This can help to create a sense of ownership and belonging among learners, which can lead to better engagement and learning outcomes; (3) Creativity: Diversity can stimulate creativity and innovation. When people from different backgrounds and experiences work together, they can bring new ideas and approaches that might not have been considered otherwise. This can lead to the development of more engaging and effective learning experiences; and (4) Empowerment: By involving a diverse group of actors in the co-creation process, it can empower learners to take ownership of their learning experience. When people feel that their voices and opinions are valued, they are more likely to engage with the learning space and take responsibility for their own learning. Much of the literature on learning communities in higher education contexts focuses on student or student-faculty learning communities (e.g. Kuh, 2009; Brownell & Swaner, 2009; Price, 2005; Garrison & Anderson, 2003). However, the case study analysis suggests that a broader look at the whole constitution should be taken with a focus on physiological, cognitive and/or cultural diversity within the learning communities. More specifically the learning communities included students from different levels of tertiary education (CS1), engagement of stakeholder groups beyond the university (CS2, CS3, CS4) and discounts or favorable conditions for socially vulnerable groups (CS6).

- **Inclusivity.** Inclusivity promotes diversity of thought, which is important in co-creation of knowledge. When individuals from different backgrounds, cultures, and experiences come together to collaborate on a project, they bring their unique perspectives, ideas, and insights. This diversity of thought can lead to more creative and innovative solutions to problems, as well as a richer and more comprehensive understanding of a subject. To promote the co-creation and inclusion of socially sensitive groups (e.g. individuals who have historically been marginalized, discriminated against, or excluded from mainstream society based on factors such as race, gender, sexuality, religion, or ability) in a learning community, universities should take steps to create a safe and welcoming environment where all individuals feel valued and respected. This can involve providing resources and support for individuals who may face unique challenges, such as disability services, gender-neutral restrooms, or multicultural student centers. The majority of case studies analyzed focused on openness to all members of the community (CS7, CS8, CS9, CS10, CS11, CS12, CS13) and highlighted the issues of accessibility (CS13, CS14).

- **Trust based relationships**. For co-creative outcomes to emerge the relationships with the learning community require trust and understanding rather than status and position (Haxeltine et al., 2016). Here the notion of social capital reveals its importance. Social capital refers to the social networks of individuals and the norms and trustworthiness that arise from them (Putnam, 2000). According to the social capital theory, a high level of trust reduces transaction costs between stakeholders and thus increases the efficiency of communities (Tchorek et al., 2020) since coordinated actions reduce conflicts and create synergies (Torfing et al., 2019).

2.2.3. Resources and support

The third group of enablers are the resources critical for the operation of the learning community. The university can provide resources and support to the learning community to ensure its success. This can include funding, staff support, and access to technology and facilities. It is important to note that the resources do not have intrinsic value on their own. Rather, they become valuable for a specific actor when applied in the co-creative process (Mele et al., 2010).

- **Access to space**. Dörk and Monteyne (2011) that humans and artefacts in public spaces interact with each other in complex, and contingent ways. This means that physical characteristics and social aspects are equally important and influence each other by being part of actor networks. Hence, this dimension evaluates physical aspects of the observed space that form its quality and refers to the spatial factors enhancing social integration and generating pleasure to communities. It is the quality of learning spaces that leads to attachment, thereby making the community feel better, safer and included. The empirical evidence confirms that functional, visual and physical qualities of space enhance civic and cultural identity, quality of life, social capital and economic development (Woolley et al., 2003; Norgaard & Borresen, 2010; Francis, 2003). The availability and accessibility of informal learning spaces on campus can provide opportunities for informal interactions and social connections, which can foster a sense of community and belonging among the students. In addition, student belongingness has been shown to have a positive impact on affective commitment to the university and interpersonal relations (Allen & Meyer, 1990). Yorke's (2016) research has also shown that students who feel a sense of belonging and have positive interpersonal relations are more likely to persist in their studies and have better academic outcomes.

- **Use of technology**. Digital technologies play a critical role in co-creative learning communities by enabling collaboration, communication, and knowledge-sharing among members. For example, digital platforms such as online forums, video conferencing tools, and collaborative software can facilitate real-time communication and collaboration between geographically dispersed members. This can increase the inclusivity and accessibility of the learning community, allowing for broader participation and engagement. By leveraging these technologies, co-creative learning communities can better address complex social issues and create more innovative and impactful solutions.

  The access to technologies is also important in learning communities that meet offline. For example, technologies such as mobile devices, tablets, and laptops can facilitate real-time access to digital resources, enabling members to engage in online discussions, share resources, and access information relevant to the learning community's goals and objectives. Digital tools such as online forums, social media platforms, and messaging apps can also be used to extend the learning community's reach beyond the physical meeting space. These tools can facilitate ongoing communication and collaboration between members, enabling them to stay connected and engaged even when they are not physically together. Additionally, technologies such as presentation software, virtual whiteboards, and video conferencing tools can be used to support collaborative problem-solving and decision-making activities within the learning community. These tools can enable members to

share ideas, visualize complex concepts, and work together in real-time to develop innovative solutions to social challenges.

- **Support of the university.** The support of the university can play a crucial role in the creation and sustainability of informal learning communities by providing funding, staff support, and other resources to facilitate their formation and operation. *(1) Financial support* from the university can be used to cover costs associated with organizing and promoting learning community events and activities, such as venue rental, transportation, and equipment rental. This funding can also be used to provide incentives for students or faculty members to participate in the learning community, such as scholarships, awards, or travel grants. (2) *Staff support* from the university can also be critical to the success of informal learning communities. University staff members can help to facilitate the formation and operation of learning communities by providing logistical support, connecting community members to relevant resources, and helping to organize and promote learning community events and activities. Moreover, university staff can provide mentorship and guidance to community members, helping them to develop the skills and knowledge necessary to effectively address social issues and create positive social impact. (3) Finally, the university can also support the formation and operation of informal learning communities by creating *policies and procedures* that enable their formation and operation. For example, the university may establish guidelines for the use of university facilities for learning community events, or provide access to university resources such as libraries, laboratories, or other facilities that can be used to support learning community activities.
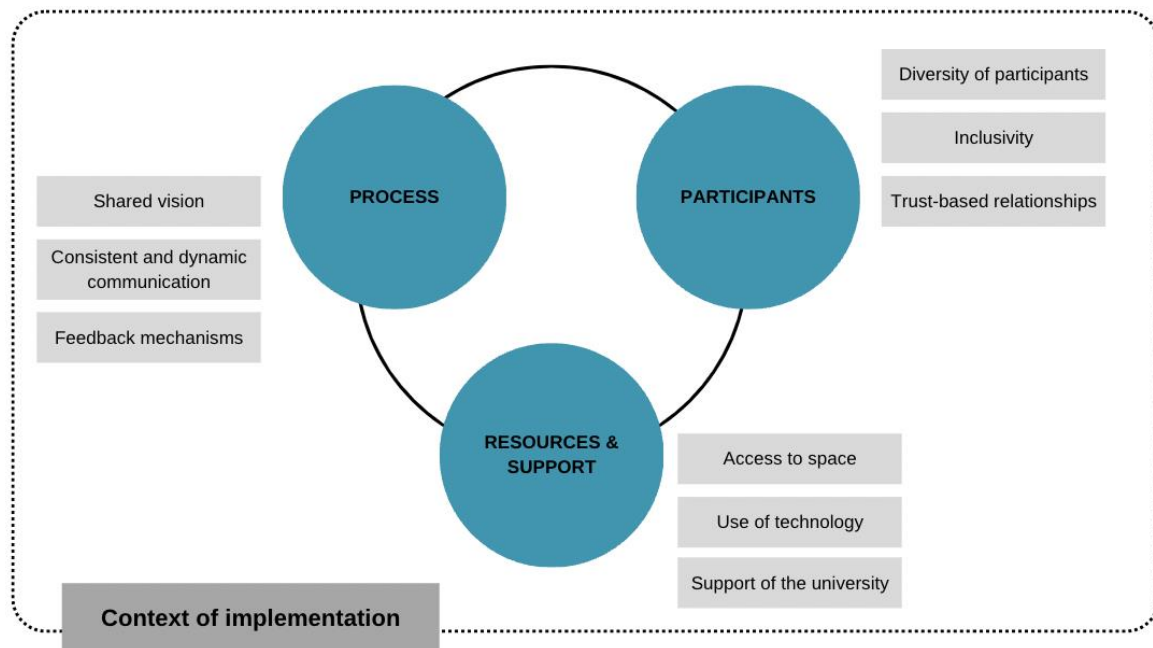
2.3. Conceptual framework: Learning communities as co-creative ecosystems

The assessment and evaluation of learning communities must consider the multiple academic and social interactions at work in these environments. Additionally, learning communities often have a variety of implementation strategies and offer a diverse array of approaches (e.g. interdisciplinary, theme-based, service learning-focused). Thus, learning communities can be approached as **co-creative ecosystems**, where stakeholders work together to create and share knowledge in a collaborative and supportive environment. In this type of community, individuals are active participants in their own learning and contribute to the learning of others. In a co-creative ecosystem, members are encouraged to share their knowledge, skills, and experiences with each other. This sharing is not limited to one-way communication, but rather it is a two-way process where members listen to each other, ask questions, and provide feedback. As a result of this collaboration, a learning community can create a rich and diverse body of knowledge that is continually evolving and adapting to new challenges and opportunities. Members of a learning community can also provide each other with emotional support, motivation, and accountability, which can help to sustain their learning over time. Overall, a learning community as a co-creative ecosystem can foster a culture of continuous learning, where members are empowered to take ownership of their learning and actively engage with others to co-create knowledge and solve problems.

The conceptual framework of co-creative learning communities is grounded in relevant literature on co-creation, community development, and learning discussed in previous section and provides a structured approach to understanding the factors that contribute to effective co-creation and learning within a community. The framework consists of three main elements

(see Figure 1). The **process element** includes the activities, strategies, and methods used to facilitate co-creation and learning within the community. The **participants element** involves identifying the key stakeholders and their roles and responsibilities in the co-creative learning process. The **resources and support** element include the materials, technologies, and human capital needed to support the co-creative learning process. In the context of co-creative learning communities, an ecosystem approach also enables us to consider the broader socio-cultural, economic, and environmental factors that influence the co-creation and learning process. Such an outlook involves analysis of **context of implementation** (i.e. the social networks, institutional arrangements, and policies that affect the community).

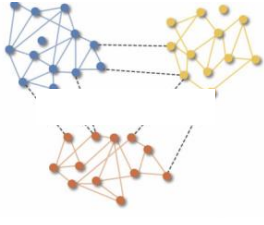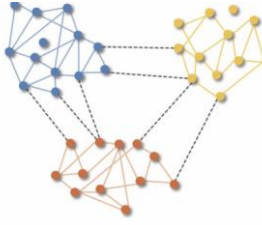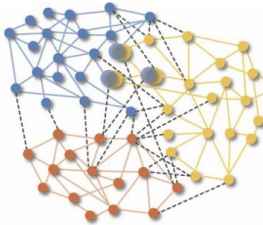*Figure 1: The elements of conceptual framework*

By adopting an ecosystem approach, the conceptual framework provides a more comprehensive understanding of the factors that contribute to effective co-creative learning communities considering the contexts of its implementation. An ecosystem-based view helps to identify potential barriers and opportunities for the community and can inform the design of strategies and interventions that are tailored to its unique needs and context.

2.4. Maturity of the co-creative learning community

To design strategies for establishing and managing learning communities, an evaluation system is needed. Authors suggest (e.g. Rabelo & Bernus, 2015) that successful ecosystem is a result of a process of continuous evolution, which is often long, complex and slow and its development may have different stages of maturity (Gomes et al., 2016). The maturity stage has an indirect effect on co-created knowledge (Koberg et al., 1996; Westerman et al., 2006), encompassing several characteristics that influence it, such as uncertainty (Semadeni & Anderson, 2010), size (King et al., 2003), age (Kotha et al., 2011) and experience (Godart et al., 2015). The proposed evaluation system follows the classification by Nylund (2019) and suggests the ecosystem passes through the nascent, emergent and mature phases of development. With the understanding that the innovation ecosystem is not a one-dimensional organism, we can get into the factors that make an ecosystem mature. Table 6 below provides

an overview of the elements of the co-creative learning ecosystems discussed in the section above and define different levels of its maturity.

Table 6: Maturity of co-creative learning communities

	Nascent	Emergent	Mature
Process			
Shared vision	Lack of unified vision and trust among the participants of the learning community. Participants may have different goals, priorities, and perspectives, which can lead to misunderstandings and conflicts.	The vision is shared but not is not yet communicated and/or implemented in a consistent manner. Participants may have engaged in discussions and activities to develop a shared understanding of their goals, priorities, and perspectives. However, there may still be some inconsistencies or variations in how the shared vision is communicated and implemented.	Transparent community with a unified vision. Participants work together to tackle multidimensional issues jointly through connection and engagement based on a common vision. The shared vision is clearly communicated and understood by all participants, and there is a strong sense of trust and accountability within the community. The shared vision guides the development and implementation of co-creative learning activities and serves as a foundation for ongoing innovation and growth.
Communication between the actors of community	Limited networking and communication efforts between the actors of the co-creative learning community. Participants may be working in silos, with limited opportunities for collaboration or exchange. There may also be limited awareness or understanding of the roles and contributions of other actors in the ecosystem, which can hinder effective communication and collaboration.	Growing networking and communication opportunities between different actors of the co-creative learning community. Participants may have engaged in networking events, online forums, and other communication channels to exchange ideas and insights. However, there may still be some challenges in terms of consistency and inclusivity of communication, as well as a lack of clear goals and expectations for communication among participants.	Consistent and dynamic communication between the actors within the co-creative learning community. Participants have established clear communication channels and protocols, and are able to exchange ideas, feedback, and resources in a timely and inclusive manner. Communication is also aligned with the shared vision and goals of the community and supports ongoing innovation and growth. There is a culture of openness and transparency within the community, which fosters trust and collaboration among participants.
Feedback mechanisms	Limited or no feedback mechanisms in place to gather input from participants on the co-creation and learning process. There may be a lack of	Growing awareness of the importance of feedback mechanisms in the co-creation and learning process. There may be ad hoc or informal	Consistent and dynamic feedback mechanisms are in place to gather input from participants on the co-creation and learning process. Feedback

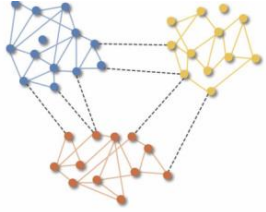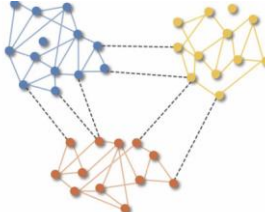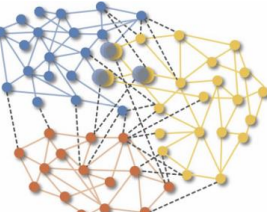|			
	understanding of the importance of feedback, or limited resources to implement it effectively.	feedback mechanisms in place, but they may not be consistent or effective in gathering input from all participants.	is used to inform decision-making and improve the co-creation and learning process over time. There is a culture of continuous improvement and learning, and feedback is valued and actively sought out by all participants.
Participants			
Diversity of actors	Low inclusivity and connections between homogenous actors. here may be a narrow range of perspectives, expertise, or backgrounds represented among the participants. This can limit the ability of the community to address complex and multidimensional issues and may result in a lack of creativity and innovation in the co-creation and learning process.	Fragmented, transitory and unstable connections between homogenous actors. There may be efforts to engage new or underrepresented perspectives, expertise, or backgrounds in the community. However, there may still be barriers to participation or limited understanding of the importance of diversity in the co-creation and learning process.	High inclusivity and intense connections between heterogeneous actors. Diverse and inclusive community with a wide range of perspectives, expertise, and backgrounds represented among the participants. The community actively seeks out and values diversity as a key component of the co-creation and learning process and works to create an inclusive environment that encourages collaboration, creativity, and innovation.
Inclusivity	Limited or no efforts to promote inclusivity in the co-creative learning community. There may be a lack of awareness of the importance of inclusivity, or limited resources to support it effectively. This can result in the exclusion of certain groups or individuals, and a lack of diversity and creativity in the co-creation and learning process.	Growing awareness of the importance of inclusivity in the co-creative learning community. There may be ad hoc or informal efforts to promote inclusivity, but they may not be consistent or effective in promoting participation and engagement among all members of the community.	Inclusive community that actively promotes and supports the participation and engagement of all members, regardless of background or experience. There is a culture of respect, openness, and collaboration, and efforts are made to remove barriers to participation and promote diversity and creativity in the co-creation and learning process.
Trust based relationships	Limited or no trust-based relationships between participants of the co-creative learning community. There may be a lack of shared values or goals, or limited opportunities for interaction and collaboration, resulting in low levels of trust among participants. This can hinder the effectiveness of the co-creation and learning process and limit the potential for innovation and creativity.	Developing trust-based relationships between participants of the co-creative learning community. There may be growing opportunities for interaction and collaboration, and efforts to establish shared values and goals. However, trust may still be fragile, and there may be a need for further efforts to build and maintain relationships.	Strong and sustained trust-based relationships between participants of the co-creative learning community. There is a culture of openness, respect, and collaboration, and participants work together towards shared goals and values. Trust is built on a foundation of mutual understanding and respect and is sustained through ongoing communication and collaboration.
Resources and support			
Support of the university	No initiatives related to initiation and maintenance of learning communities. There may be a lack of awareness or	Fragmented initiatives related to initiation and maintenance of learning communities. There may be increased investment in	Infrastructure of resources and support set for for knowledge sharing and continuously improved based on the needs

	understanding of the importance of such communities, or limited resources and infrastructure to support their development.	resources and infrastructure to support the communities, and efforts to establish partnerships and collaborations with other academic and non-academic organizations. However, support may still be limited or inconsistent, and there may be a need for further advocacy and communication to promote the importance of the learning communities.	of actors within learning communities. There is a recognition of the importance of the communities as drivers of innovation, creativity, and social impact, and significant investment in resources and infrastructure to support their ongoing development.
Access to space	Limited or no access to physical or digital spaces for co-creative learning activities. Participants may face barriers such as lack of physical space, limited access to technology, or inadequate infrastructure to support collaboration and co-creation. This can limit the scope and quality of learning activities and may result in exclusion of certain participants or groups.	Growing availability and accessibility of physical and digital spaces for co-creative learning activities. There may be efforts to establish dedicated spaces for co-creation, such as innovation labs or makerspaces, or to leverage existing spaces such as classrooms or community centers. There may also be investments in digital tools and platforms to support online collaboration and communication. However, access to these spaces and tools may still be limited or unevenly distributed.	Wide availability and accessibility of physical and digital spaces for co-creative learning activities. There are established and well-equipped spaces for co-creation, and digital platforms and tools are widely available and integrated into learning activities. Access to these spaces and tools is equitable and inclusive, with efforts to ensure that all participants have the necessary resources and support to engage in co-creative learning activities.
Use of technologies	Limited or no use of technologies to support co-creative learning activities. Participants may rely on traditional methods of communication and collaboration, such as face-to-face meetings or physical materials. There may be little awareness or understanding of the potential benefits of digital tools and platforms for learning, or limited access to technology due to cost or other barriers.	Growing use of digital tools and platforms to support co-creative learning activities. Participants may experiment with new technologies, such as video conferencing, online collaboration tools, or virtual reality, to support communication, collaboration, and knowledge sharing. There may also be efforts to integrate technology into the design and delivery of learning activities, such as online modules or gamification.	Wide and strategic use of digital tools and platforms to support co-creative learning activities. There are established and effective methods for using technology to support communication, collaboration, and knowledge sharing within the learning community. Participants are comfortable and proficient with a range of technologies and can effectively leverage these tools to support their learning goals. There may also be ongoing efforts to explore new technologies and adapt to emerging trends and needs.
Context of implementation			
Social networks, institutional arrangements, and policies that affect the community.			

The maturity model serves to bring together an otherwise complex and abstract set of ideas and simplifies it into one clear picture. Doing so allows to assess the level of maturity for each element of evaluation and identify the potential strengths and limitations of the ecosystem. This allows to outline more specific and actionable recommendations.

2.5. Monitoring of implementation

After implementing the learning community, it is important to monitor the maturity level and analyze the possibilities of improvements. The table below provides an overview of different types of engagement strategies and guidelines on how to transfer from nascent to mature level.

Table 7: Maturity of co-creative learning communities and improvement possibilities

	Nascent	Emergent	Mature	
Process				
Shared vision	Lack of unified vision and trust among the participants of the learning community.	The vision is shared but not is not communicated and/or implemented in a consistent manner.	Transparent community with a unified vision. Participants work together to tackle multidimensional issues jointly through connection and engagement based on a common vision.	Improving process: Design thinking methodology (given template in 4th chapter) Use systematic approach, continuous improvement, and the application of best practices (described below)
Communication between the actors of community	Limited networking and communication efforts between the actors of the co-creative learning community.	Growing networking and communication opportunities between different actors of the co-creative learning community.	Consistent and dynamic communication between the actors within the co-creative learning community.	
Feedback mechanisms	Limited or no feedback mechanisms in place to gather input from participants on the co-creation and learning process.	Growing awareness of the importance of feedback mechanisms in the co-creation and learning process.	Consistent and dynamic feedback mechanisms are in place to gather input from participants on the co-creation and learning process.	
Participants				
Diversity of actors	Low inclusivity and connections between homogenous actors.	Fragmented, transitory and unstable connections between homogenous actors.	High inclusivity and intense connections between heterogeneous actors.	Improving process: Assessment and Baseline, Personalization, Peer Learning, Adaptation and Iteration strategies could be applied.
Inclusivity	Limited or no efforts to promote inclusivity in the co-creative learning community.	Growing awareness of the importance of inclusivity in the co-creative learning community.	Inclusive community that actively promotes and supports the participation and engagement of all members, regardless of background or experience.	
Trust based relationships	Limited or no trust-based relationships between participants of the co-	Developing trust-based relationships between participants of the co-	Strong and sustained trust-based relationships between participants of the	

|	creative learning community.	creative learning community.	co-creative learning community.	
Resources and support				
Support of the university	No initiatives related to initiation and maintenance of learning communities.	Fragmented initiatives related to initiation and maintenance of learning communities.	Infrastructure of resources and support set for knowledge sharing and continuously improved based on the needs of actors within learning communities.	Improving process: Ongoing communication with the representatives of university, clear information about accessibility of the learning space, availability of digital tools for students.
Access to space	Limited or no access to physical or digital spaces for co-creative learning activities.	Growing availability and accessibility of physical and digital spaces for co-creative learning activities.	Wide availability and accessibility of physical and digital spaces for co-creative learning activities.	
Use of technologies	Limited or no use of technologies to support co-creative learning activities.	Growing use of digital tools and platforms to support co-creative learning activities.	Wide and strategic use of digital tools and platforms to support co-creative learning activities.	
Context of implementation				
	Social networks, institutional arrangements, and policies that affect the community.			

Going from a nascent (early or beginning) level of a process to a mature level involves a systematic approach, continuous improvement, and the application of best practices. The process of transitioning participants from a nascent (beginner) level to a mature (advanced) can be focused on some general steps and strategies to help participants progress from a nascent to a mature level:

1. Assessment and Baseline: Start by assessing the current knowledge, skills, and abilities of the participants. Understand where they are in their journey and create a baseline for their progress. This can help you tailor your approach to their specific needs.

2. Personalization: Provide opportunities for individualized support for those who need it. Tailor your instruction to meet the unique needs of each participant.

3. Peer Learning: Foster a collaborative learning environment where participants can learn from each other. Encourage peer mentoring and group discussions to facilitate knowledge sharing and skill development.

4. Adaptation and Iteration: Continuously assess and adapt methods based on the evolving needs of participants. Be open to feedback and make necessary adjustments to improve the learning experience.

3. Piloting activity at Mykolas Romeris University

To test out the practical application of the co-creative learning communities' conceptual framework, a piloting activity has been started in Mykolas Romeris University in Vilnius, Lithuania. The foundational ethos of co-creative activities lies in their **bottom-up approach**, which emphasizes the involvement of a diverse range of stakeholders impacted by the subject at hand. This inclusive methodology formed the cornerstone of our learning community's design. By considering the three elements of process dimension in the conceptual framework (shared vision and trust, participants and feedback mechanism), the initial development of the community was completed during the steps outlined in Figure 2 below. It is important to note however, that an iterative approach was taking by and in reality, the process was less linear and involved a number of feedback loops.

Figure 2: The elements of conceptual framework
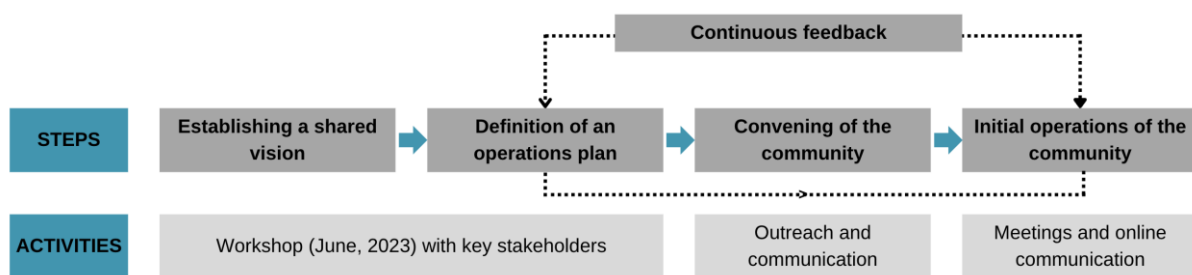
Establishing a shared vision and defining the operations plan (initial workshop)

The starting point of the community development was the establishment of a shared vision followed by definition of the community's operations plan. As noted in the sections above, when stakeholders are involved in defining the purpose and goals of the community, they are more likely to be committed to the process and feel a sense of ownership and responsibility towards achieving the shared vision.

In achieving this goal, the MRU team decided to apply **design thinking** methodology. Design thinking is a favored method both in academia and industry in co-creation efforts largely due to its human-centric approach. The essence of design thinking lies in its ability to deeply understand and empathize with users' needs and experiences. Rather than being a solution-first process, it focuses on the end-users and their challenges, ensuring that solutions are both relevant and effective. Design thinking provides structured stages - from empathy to ideation to prototyping to testing - that guide stakeholders in a step-by-step manner. In co-creation, where you're bringing together individuals who might not typically work within the same processes or even speak the same "language", having a clear, structured methodology can be invaluable. Ultimately, this participatory method reinforces stakeholder commitment, ensuring that the resultant learning community is not just conceptual but is genuinely embraced and operationalized by its intended members.

The workshop was conducted in June 2023 in the premises of Mykolas Romeris university with an attendance of 12 participants (8 students, 2 members of academic staff, 2 members of non-academic staff at MRU). The participants were recruited through an open call in the Institute of Communication. The workshop required intense preparation on the side of MRU (workbook template prepared) and lasted 3 hours. Table 7 below outlines the key steps and their outcomes.

Table 8: Outline of the workshop activities

Stage	Activity
0: Setting the stage	A brief outline of the design thinking process and its importance in defining a shared vision and operations plan for the learning community. Emphasis was given to the value of shared vision in fostering a sense of belonging, motivation and active participation in community activities. The objective of the workshop was defined as follows: Define a shared vision and operations plan for an informal learning community based on the needs and aspirations of students, academic members, and administrative staff. *Key outcome: warm-up*
1: Empathize	Students, academic members, and administrative staff were divided into 2 smaller groups. Each group discussed and listed out key challenges they believe need addressing within the university's ecosystem through a learning community. The empathize step is important in understanding the underlying needs of all stakeholders involved. The diversity was essential, as it ensured that the community was rooted in a multifaceted understanding of the challenges at hand. This open forum allowed for a candid exchange of thoughts and the identification of common pain points, such as the often-mentioned unclear requirements, motivation dips, and unfamiliarity with research methodologies. As a result of group discussions and brainstorming activities, four key themes emerged among the 2 groups: • *Subject-based communities*: Many participants expressed that subjects like law and microeconomics posed particular challenges for them. They felt the need for dedicated support groups where they could collaboratively navigate the intricacies of these subjects. • *Interest-based communities*: Apart from academics, the emotional and social well-being of students was deemed essential. Proposals for communities centered around shared hobbies like sports, reading, and other extracurricular activities were put forth. • *Cultural exchange communities*: With a significant number of Erasmus exchange students at the university, there was an identified need for platforms where local and exchange students could connect. Such communities would provide avenues for cultural exchanges, friendship formations, and exploration of study abroad options. • *The bachelor thesis preparation process*. Participants consistently voiced that thesis preparation was a lonely journey, marked by ambiguous requirements, lack of motivation, and a noticeable absence of collaborative spirit. *Key outcome: initial list of ideas for learning community*
2: Define	The defined stage aimed to select 1 topic/vision of a relevant learning community. Each group shared their ideas outlined in step 1, which were then written on a board. Participants first voted on the challenges they resonate with most using stickers followed by the discussion on pros and cons of each thematic priority. The overwhelming consensus was the need for a community that addressed the challenges surrounding the bachelor thesis preparation process. *Key outcome: the vision of the learning community defined*
3: Ideation	After the key vision of the learning community was co-defined, the groups worked on preparing the operations plan for the community. In this regard, the groups brainstormed the potential solutions for the following aspects: *What will it look like? Who will be involved? What resources are needed? How will it function, both offline and online? Where will it convene?*

	Faculty members, who guided students through their theses, were consulted to understand the academic and institutional hurdles. Their input was instrumental in identifying gaps in the current support system. *Key outcome: initial list of solutions for the operations plan defined*
4: Prototype and test	Each group drafted a brief operations plan for the community in line with a template for operations plan prepared by MRU including (based on the conceptual framework: Objective, Modes of communication, Membership and moderation, Space, Collaboration and peer support, Feedback. The groups presented the prototype operations plan and gathered feedback from all participants of the workshop. After gathering feedback and discussion the final operations plan was devised. This ensured that the resulting community is comprehensive, inclusive, and aligned with the shared vision. *Key outcome: final operations plan of the learning community*
Conclusion & Next Steps	Summarized the workshop's insights, especially the consensus on the need for a bachelor thesis preparation community. Outlined the next steps in formalizing and implementing the community operations plan based on the workshop's outcomes.

By leveraging the principles of design thinking, this workshop aimed to harness the collective intelligence of diverse stakeholders. It ensured that the established informal learning community is not just a top-down initiative but is deeply rooted in the real challenges and aspirations of its intended members.

Introduction to the pilot community at Mykolas Romeris university. The informal learning community for Bachelor Thesis Preparation is a student-led initiative aimed at addressing the challenges and uncertainties that students often face when preparing their bachelor thesis. This community was born out of a collaborative effort, informed by consultations and co-design processes involving various stakeholders within the university. The challenges students encounter, such as unclear requirements, lack of motivation, and unfamiliarity with research methods, can be daunting and hinder their progress. The learning community is designed to provide a supportive and comprehensive platform to help students overcome these challenges and excel in their thesis projects.

Table 9 below outlines the key elements of the resulting operations plan.

Table 9: Operations plan of the learning community at MRU

Conceptual framework	Operational elements	Definition of the element co-created during the workshop
Shared vision	Objectives	To provide a supportive and collaborative environment for students undertaking their bachelor's thesis, enabling them to share resources, seek feedback, and navigate challenges together.
Communication between the actors of community	Modes of communication	Primary Platform**:** A dedicated Facebook group will serve as the primary platform for continuous interactions, updates, and sharing of resources. Meetings: Monthly in-person meetings will be organized to foster deeper connections, address specific challenges, and facilitate collaborative learning.
Feedback mechanisms	Evaluation and feedback	Personalized progress journals. Members will document their achievements, challenges, and milestones within the community platform. Periodic check-ins during monthly meetings can provide an avenue for sharing these updates and seeking guidance from fellow members. This not only encourages accountability but also allows the community to celebrate each other's achievements and collectively overcome hurdles.
Diversity of actors	Membership	Students can join the Facebook group upon invitation or request.
Inclusivity	Measures for inclusion	Students with different backgrounds, cultures, and experiences are involved in the learning community. Factors such as race, gender, sexuality, religion, or ability in a learning community are taken into account.
Trust based relationships	Moderation	Group rules will be established and pinned at the top of the Facebook page, ensuring respectful communication and relevance of content shared.
	Collaboration and peer support	Buddy System: New members can be paired with experienced members to guide them through the initial phases of their thesis. Expert Sessions: Once in a while, a faculty member or an advanced student can be invited to the monthly meetings or to the Facebook group for Q&A sessions.
Use of technologies	Digital tools	Digital platforms such as video conferencing tools will be used for additional communication. Facebook group will serve as the primary platform for continuous interactions, updates, and sharing of resources. Mobile devices, tablets, and laptops will be used for accessing digital resources, sharing resources on Facebook group.
Access to space	Space for face-to-face meetings	A consistent, accessible location, preferably on campus or a quiet community space i.e., library.

Support of the university	Staff support	University staff members (from library) will help connect community members to relevant resources. Institute of communication will be helping to organize and promote learning community events and activities.

The need for this learning community arises from a genuine concern for the well-being and academic success of students during their thesis preparation journey. With the input of the administration and support staff, the community addresses critical aspects of thesis work. By offering guidance on accessing relevant literature, mastering proper citation techniques, understanding deadlines, and utilizing university resources effectively, the community directly tackles the pain points that students often struggle with. This holistic approach ensures that students not only navigate the technicalities of thesis preparation but also develop the skills, confidence, and motivation needed to excel in their academic pursuits. By fostering a collaborative and supportive environment, the community aims to instill a sense of belonging and mutual growth among its members.

Convening of the learning community

To ensure widespread reach, flyers were strategically placed in the university library—a hub for academic resources and student activity. Additionally, direct outreach efforts were undertaken by contacting thesis supervisors and administrative staff who are instrumental in guiding students through the thesis process. The community's commitment to inclusivity was further evidenced by attending student meetings related to the thesis, where the group presented its mission and welcomed all interested participants.

Initial operations of the learning community

As noted in the operations plan, the learning community operates through a dual approach: online engagement via a dedicated Facebook group and offline interaction through monthly meetings held in the university library. The Facebook group serves as a virtual space where members can ask questions, share insights and seek peer advice. This online platform provides accessibility and convenience for members to engage at their own pace. In-person meetings at the library offer an opportunity for deeper discussions, hands-on workshops, and face-to-face interactions with experts and peers. This combination of online and offline engagement ensures that members can choose the mode that best suits their preferences and needs.

Up until now we have had 2 on-site meetings. The Facebook group currently has 12 members (including 8 students and 4 staff members)

4. Guidance for implementation based on the insights gained during the piloting activities

The section will provide an overview of **different types of engagement strategies** and **guidelines** on how to select the methods.

The starting point of the community development is **the establishment of a shared vision** followed by definition of the community's operations plan. In achieving this goal, the MRU team decided to apply **design thinking methodology**. It can be used by the partner institutions followed by this **template**:

Defining the vision and operations plan of informal learning community at MRU

design thinking workbook

methodology based on works of:

 &

1 Part: **empathize**

This step in *design thinking* aims to understand the people affected by the problem. It is important to forget preconceptions, knowledge and stereotypes about the problem. This requires:

– not to judge people (interviewees, team members) for having a different opinion. It's just a matter of observing and connecting.
– ask questions about everything, even things that seem obvious (we ask as if we were 4 years old)
– looking for trends, interesting, recurring themes
– listen to what people say

As a team you will need:

1. Familiarise yourself with the problem, analyse the current situation by analysing online sources if applicable (e.g. Google Trends, forum analysis, statistics, market analyses, etc.)
2. Preparing for the interview if applicable (anticipating potential interviewees, preparing questions), for the observation (who you will observe, how and when) if applicable.
3. Agree between team members who will do it and when.

INFORMATION SEARCH AND SUMMARY

WHERE DID YOU LOOK FOR INFORMATION?	WHO IS NOW RESPONSIBLE FOR SOLVING THE PROBLEM? Who is most affected?
WHAT ARE THE REASONS BEHIND THE PROBLEM?	**KEY FACTS ABOUT THE PROBLEM (statistics, figures, etc.)**

2 Part: **problem definition**

TASK DESCRIPTION

In this part, you will share the information you have collected (notes, photos, etc.), review the data, identify the main problems and organise your insights. The visual presentation of the data collected is particularly important in this part.

The final objective of this part is to formulate a clear problem.

The objectives of this part are:

1. Each team member shares the user stories and notes they have collected. At the same time, the other team members write down memorable phrases, objections and surprising information on a post-it. The aim of this exercise is to understand the user's relationship to the problem and their needs. The exercise is carried out on a poster hung on the wall. The final result is photographed.
2. Preparing an empathize map. The map is drawn on a poster, using post-its and markers. Create a new map for each user group.
3. Preparing the user journey. The description of the trip is prepared on a poster. A new map is created for each user group.
4. Point-of-view (POV) definition. Narrowed problem definition:
   a. Users. Divide users into specific segments.
   b. Needs. Focus on the use of verbs in defining user needs. Nouns immediately indicate the solution to the problem.
   c. Insights. Identify what has surprised you and encouraged you to develop more innovative solutions.

3 Part: **generating ideas**

TASK DESCRIPTION

The aim of this part is to have many and varied ideas. The development of ideas allows you to propose radical solutions. The ideas generated allow for innovative solutions to user problems.

Duration: 1 hour

1. Formulate 5 thought-provoking questions (how could we....?)
2. Formulate at least 50 alternative solutions to the identified problems. Record your ideas on a poster.
3. Select 2-3 ideas to work on next.

10 BRAINSTORMING RULES

1) Don't judge, let ideas flow, this is only idea generation phase
2) Don't comment - even if your team member suggest most silly ideas. The only acceptable comment is a very short "wow," "cool," or "sweeeeeet." The slightest comment or criticism will change the mood in the room, and the group will start to clam up.
3) Do not correct. Don't edit - it doesn't matter where the comma goes in the sentence, or how best to word something. The font choice, color palette and idea name are irrelevant.
4) Don't think about the practical implementation of an idea. Don't execute right away (avoid questions such as: What would it cost? Who would run it? What would the project plan look like? Etc.)
5) Don't worry about the opinions of others. Don't worry - to create an environment where everyone feels comfortable taking risks and has no fear of embarrassment or negative consequences, set an example.
6) Don't look backward - every idea is new at this moment, so share every one that you believe has merit.
7) Don't lose focus - idea sessions can easily dissolve into wandering and woolgathering. For example: An idea might remind someone of a story she just has to tell. Don't let it happen.
8) Don't compare ideas. Leave it for later.
9) Don't lose your energy it's only an hour.
10) Don't make fun of others ideas.

BRAINSTORMING NOTES

SELECTED IDEAS

_____

_____

_____

4 Part: **Prototyping**

TASK DESCRIPTION

1. Prepare at least 2 prototype operations plans based on the information gathered and ideas generated in the previous steps.

Prototyping allows you to make an idea tangible. Prototypes allow you to engage users in new ways and validate that your team's ideas reflect the identified user wants and needs.

Prototyping is about:

1. Don't waste time debating, just start creating
2. It is better to prepare several prototypes than to be stuck with one
3. The end user and their needs must come first
4. The prototype must show how value will be added to the user

Operations plan template of the learning community

Conceptual framework	Operational elements	Definition of the element co-created during the workshop
Shared vision	Objectives	What is the objective of this plan?
Communication between the actors of community	Modes of communication	What will be the modes of communication?
Feedback mechanisms	Evaluation and feedback	How will you collect feedback?

Diversity of actors	Membership	
Inclusivity	Measures for inclusion	
Trust based relationships	Moderation	What kind of rules of communication will be applied?
	Collaboration and peer support	
Use of technologies	Digital tools	
Access to space	Space for face-to-face meetings	
Support of the university	Staff support	

5 Part: **Testing**
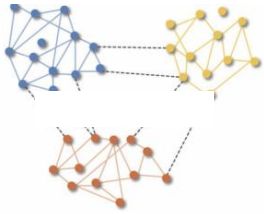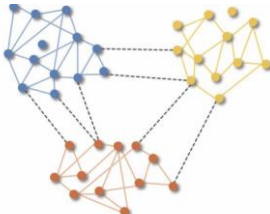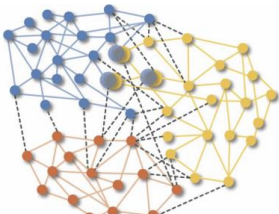
TASK DESCRIPTION

1. Present the prototypes.
2. Integrate the comments into the presentation of the final prototype.

The prototype does not have to be perfect. It is important that it reflects how additional value will be created for the user. Prototype testing allows to correct mistakes and more clearly convey user needs.

After implementing the design thinking methodology and creating learning community's operations plan, it would be important to evaluate the level of learning community based on the elements of the co-creative learning ecosystems discussed in the previous chapters and define different levels of its maturity (the template below is prepared, it can be given for the learning community to do the self-evaluation).

In order to select different types of engagement strategies and guidelines on how to transfer from nascent to mature level the 2.5. Monitoring of implementation chapter can be analyzed, where Table 7 provides an overview of possibilities of improving process.

Template for self-evaluation of the learning community

	Nascent	Emergent	Mature
Process			
Shared vision			
Communication between the actors of community			
Feedback mechanisms			
Participants			
Diversity of actors			
Inclusivity			
Trust based relationships			
Resources and support			
Support of the university			
Access to space			
Use of technologies			
Context of implementation			
Social networks, institutional arrangements, and policies that affect the community.			

5. Initiating learning communities in partner countries

The section will overview the progress of the learning communities initiated in all partner countries.

5.1. Initiating learning communities in University for Continuing Education Krems (UWK)

Establishing a shared vision and defining the operations plan (initial workshop)

The starting point of the community development was the establishment of a shared vision followed by definition of the community's operations plan. In achieving this goal, the UWK team decided to apply **design thinking** methodology as proposed by MRU and to implement the process in a slightly adapted way.

As the aim was to involve stakeholders from as many areas as possible who are involved in the provision, design, management and use of learning spaces and spatial infrastructure at UWK, a workshop duration of more than 2 hours was considered too long. Thus, to be able to complete all the steps of the proposed method, the workshop was divided into 2 parts. An initial workshop, designed as a "learning space breakfast", was held on 7th of December 2023. It lasted 2 hours (from 10:00-12:00) and 17 stakeholders from different areas participated, including representatives from the divisions of infrastructure, the division of teaching development and digital transformation, the facility management, the library, the real estate company responsible for providing university space resources, lecturers, researchers, program coordinators, as well as representatives from the students' union and the students' service center.

In this workshop the stages 0 (setting the stage) and 1 (empathize) were completed (see Table) and 2 (define) was started. All activities and outcomes were documented, and a follow-up report was sent to all participants. Based on the results of the first workshop (the "learning space breakfast") stages 2 (define) and 3 (ideation) were finalized in a second workshop, that was embedded in the National Multiplier Event held at UWK on 30th of January 2024. Nine people were involved in this workshop with the aim to develop an operations plan for a "learning space community" at the UWK, seven of whom had already attended the first workshop.

Table below outlines the key steps of the process and their outcomes.

Table 10: Outline of the workshop activities

Stage	Activity
0: Setting the stage	This step was completed in the first workshop, the "learning space breakfast", which was held in a seminar room at UWK. After a short introduction round, a brief overview of the NIILS project was given and the idea of establishing a co-creative learning community at Campus Krems, which deals with learning spaces from various perspectives, was presented. The procedure of the workshop titled "design your learning spaces community" was then explained to the participants.
	The objective of the workshop was defined as follows:
	• Initiate the co-creative development of a 'Learning Spaces Community' at Campus Krems involving all interested persons engaged in the provision, research

	and design, as well as the use of (physical, virtual, hybrid, formal or informal) learning spaces • Create an overview of existing projects, initiatives, stakeholder groups & contact persons at Campus Krems related to learning spaces • Create an overview of the various interests and concerns in dealing with 'learning spaces' *Key outcome: warm-up*
1: Empathize	For the "learning space breakfast" four blocks of tables were provided in the seminar room, at which the participants could arrange themselves as they wished. This resulted in four mixed groups of 4 to 5 members, which were then also used for group work. Hot drinks and breakfast snacks were provided to create a relaxed atmosphere and an informal setting ("learning space breakfast"). The workshop was organized in three rather short and intensive steps, as follows: **Step 1: Collecting individual thoughts (approx. 10 minutes)** Participants were asked to collect their own thoughts on the following questions and write them down on sticky notes in different colours, adding their names or abbreviation: • What is your interest in a 'learning space community' or what existing challenges could be addressed by such a community? (pink) • What can or would you like to contribute to such a community? (yellow-green) (e.g. expertise, resources, contacts, experience, etc.) • How could or should such a community be organised? (orange) (e.g. network meetings, mailing list, MS Teams group, themed cafés, etc.) **Step 2: Discussion in the table group (approx. 15 minutes)** Participants were asked to briefly discuss their individually collected thoughts and considerations at their table and record their results on a flipchart with the following guiding questions: • Are there any overlaps, similarities or connecting issues in your collected thoughts? • Do you have any ideas or visions for a 'learning space community' and how it could be organised? (possible goals, activities, etc.) **Step 3: Brief presentation of results (approx. 15 minutes)** Each table was asked to briefly summarise for all participants which topics and contents were discussed at their table! The main results of the workshop can be summarised as follows: **Possible aims & scope of a 'learning space community'** • Exchange and overview of existing projects & initiatives, utilisation of synergies • Coordinating the interests of different user groups on campus • Exchange and joint development of ideas to meet challenges in connection with learning spaces **Contributions that participants are able and willing to bring to a "learning spaces community"** • Diverse expertise and experience, current research findings, organisational knowledge • Different stakeholder perspectives • Interface communication, time resources, possibly budget for small implementation projects • Contacts, networks

	First ideas on how such a community could or should be organised • Low-threshold access, • Results- and implementation-orientated • Face-to-face meetings (e.g. quarterly or half-yearly) + digital tools for ongoing exchange • Joint activities, such as excursions, inspections, etc. • The entire campus (including all higher education institutions situated at the campus) should act as a community of interest *Key outcome: initial list of ideas regarding scope, contributions and organisation of a learning spaces community at UWK*
2: Define	The first step to define the vision of the learning community took place immediately after the learning space breakfast as kind of a "gallery walk". After the event, the participants were invited to stay longer for finishing their breakfast and to discuss and exchange ideas over the flipcharts of the workshop groups. With provided sticky dots they could additionally mark ideas on the flipcharts that they liked or concerns that they shared. The results of the workshop and the gallery walk were summarised by the NIILS project team and sent to all workshop participants as a follow-up. This summary of the results also served as an introduction to the second workshop that was held in the frame of the National Multiplier Event. *Key outcome: the vision of the learning community defined*
3: Ideation	This step was completed in the second workshop, that was held as part of the National Multiplier Event. The participants of the event could freely choose between different workshops held in parallel. Nine people decided to participate in the workshop to further develop the 'Learning spaces Community', seven of whom were already involved in the "learning space breakfast". The aim of this second workshop was to develop an operations plan for a "Learning Space Community" at UWK. The workshop was designed to work in smaller groups of 3 to 4 people to draft different options for an operations plan. However, the participants chose to work on the operations plan together in one large group. For the drafting of the operations plan, they were provided with the following guiding questions: • Shared vision: What is the goal of the 'Learning Spaces Community'? • Communication between the participants: How is communication organised? What means of communication are used? • Feedback mechanisms: (How) is feedback obtained? • Diversity: Who are the members of the community? • Inclusivity: What measures can be taken to ensure the inclusivity of the community? • Trust-based exchange: (How) is moderation organised? Which communication rules are applied? • Use of technologies: Which digital tools are used? • Spatial infrastructure: Where do face-to-face meetings take place (if planned)? • Support from the university: What (further) support from the university is required? Participants of the workshop were asked to discuss each guiding question in the group, agree on one or more suggestions for each question and record these in keywords (approx. 25 minutes in total). Finally, the group was asked to briefly present their main

	results in plenary to receive feedback. The feedback was then incorporated into a first draft of an operations plan.
	Key outcome: initial list of solutions for the operations plan defined
4: Prototype and test	Each group drafted a brief operations plan for the community in line with a template for operations plan prepared by MRU including (based on the conceptual framework: Objective, Modes of communication, Membership and moderation, Space, Collaboration and peer support, Feedback.
	Key outcome: final operations plan of the learning community
Conclusion & Next Steps	Outlined the next steps in formalizing and implementing the community operations plan based on the workshop's outcomes.

Introduction to the learning community at UWK.

Workshop 1:

Workshop 2:

Table 11 below outlines the key elements of the resulting operations plan.

Table 11: Operations plan of the learning community at UWK

Conceptual framework	Operational elements	Definition of the element co-created during the workshop
Shared vision	Objectives	The Learning Community is intended to create opportunities for informal learning spaces. These should have the following characteristics: inviting, flexible, low-threshold access and inclusion. The entire campus should act as a community of interest (IMC and KL).
Communication between the actors of community	Modes of communication	Communication should be low-threshold and ideas should be collected. The meetings should be moderated. MS Teams or emails should be used as a means of communication, especially for external participants. The meetings should take place quarterly.
Feedback mechanisms	Evaluation and feedback	Feedback should be obtained using a QR code.
Diversity of actors	Membership	The following organizations and persons should be members of the community: • FM, university administration, researchers and lecturers • ÖH (students' union) • Disability Officer • Childcare • Different hierarchical levels from all areas
Inclusivity	Measures for inclusion	By connecting the different hierarchical levels from all areas. Furthermore, through catering facilities, such as the canteen or restaurants in the surrounding area. By connecting young and older people.
Trust based relationships	Moderation	Moderation will be based on a rolling model, with a different department or stakeholder group taking over moderation for 6-12 months at a time
	Collaboration and peer support	No comments

Use of technologies	Digital tools	MS Teams group and channels for communication, collaboration and data management.
Access to space	Space for face-to-face meetings	If face-to-face meetings are planned, they should take place in the first informal learning space organised.
Support of the university	Staff support	No comments

Convening of the learning community

The participants were contacted by e-mail and in person (by telephone or in a personal meeting). Internal communication channels were also used, such as MS Teams channels of internal university MS Teams groups.

Initial operations of the learning community

The Learning Community is still under construction, there have been 2 meetings so far. The meetings have resulted in communication and implementation projects.

Conclusions, recommendations and evaluation of the learning community

After the 2nd meeting, we observed that there was an intensive bilateral exchange on various topics relating to informal learning spaces. E.g.: informal learning spaces were included in the orientation plan; new informal learning spaces were created; existing ones were improved (e.g. Tract C on the 2nd floor). Furthermore, communication in existing informal learning spaces was improved, e.g. the library improved communication regarding opening hours, terms of use, etc.

An important information for policy makers, practitioners and enablers is that the results of the learning communities show that processes that involve stakeholders (including users or user representatives, such as faculty and student representatives) engaged in the provision, management, design and use of ILS, e.g. with co-creative or participatory approaches (such as our learning communities), are an appropriate and effective way to identify needs and improve the quality, usability and inclusiveness of existing or newly created ILS.

Concrete results

Participatory approaches are a suitable and effective way to improve the quality and usability of existing or newly created ILS. The activities to initiate learning communities are the starting point for cooperation between various stakeholders and the project team in order to practically apply the knowledge gained within the framework of NIILS. Concrete measures are developed and implemented to improve the communication and transfer of information on ILS to users and to create new or enhance existing learning environments.

Communication and information transfer

As students and lecturers are often unaware of the availability of ILS, facilities such as the ÖH Lounge are explicitly listed in the university's orientation plan and marked as ILS on the initiative of the Marketing department. At the same time, the library is developing ideas to

improve the communication of user-related information on ILS, such as opening hours, terms of use, etc.

New or improved ILS

In collaboration with the Facility Management department, suitable room areas are identified to reuse decommissioned learning furniture and create new ILS. For example, communication booths that are no longer in use were set up in strategic locations and now serve as a well-established environment for individual and collaborative learning, confidential discussions, etc.

Outdoor ILS

At the request of the Facility Management department, location-specific usage concepts were developed for selected outdoor areas on campus. The results are now being used as a basis for decisions on the procurement of outdoor furniture in order to make better use of the open spaces on campus as an ILS.

Figure 3: Implementation of ILS in the university's orientation plan, reuse of discarded furniture to create or improve ILS; conceptual design of outdoor learning spaces

5.2.   Initiating learning communities in HTW Berlin

Establishing a shared vision and defining the operations plan (initial workshop)

1. Lunch-Break Informal Learning Spaces @ HTW Berlin

The development of the Learning Community (LC) at HTW Berlin began with the "Lunch-Break Informal Learning Spaces" event held on December 8, 2023. This event marked the starting point of the LC development, which was centered around the establishment of a shared vision.

The HTW team employed design thinking methodology to structure this process, facilitating a collaborative environment where participants could engage and define the operations of the community through networking and knowledge exchange. This initial gathering served as an ice-breaker and a platform for introducing the concept of informal learning spaces (ILS) to stakeholders within the university. The workshop used a hybrid format to accommodate both on-site and remote participants, ensuring broad accessibility and effective engagement.

- **Participants and recruitment:** 13 stakeholders from diverse university departments participated, recruited through targeted internal emails emphasizing the event's relevance to enhancing ILS.
- **Activities and tools:** Exchange and interactive discussions of known ILS, stakeholder roles and their interests in these spaces, and networking using a shared Miro Board (digital platform) for ongoing collaboration.

2. Hybrid Forum "Informal Learning Spaces" (Multiplier Event with Learning Community)

After the first LC event, the second LC event "Hybrid Forum" on March 5, 2024 (Multiplier Event) was initiated. The second stage was about expanding the dialogue and collaboration from the initial Lunch-Break event, whereas the three-hour forum aimed to deepen the strategic development of ILS, not only within HTW Berlin but also gaining perspectives of external stakeholders.

- **Participants and recruitment:** Conducted in a hybrid format, the forum engaged 18 attendees on-site at the Wilhelminenhof campus of HTW Berlin and 28 participants online, totaling 46 participants. This setup facilitated broad accessibility and active engagement from a diverse group of stakeholders. The recruitment for the "Hybrid Forum" was executed through targeted emails sent to both internal stakeholders and potential external stakeholders identified through research on relevant interests and fields. An event website was also established, providing all necessary information including date, location, and program details, and a registration portal. Additionally, promotional materials such as posters and flyers were created and distributed across HTW Berlin campuses to maximize visibility and participation.
- **Activities:** The session began with a detailed presentation on the NIILS project, highlighting the key qualitative and quantitative results which set the base for a more in-depth dialogue beyond the first event. The inclusion of external stakeholders was a strategic move to broaden the scope of discussions and input. A live demonstration of a mapping platform was featured, enabling participants to visualize and strategize the development of ILS at HTW Berlin. Participants provided feedback on the platform and its applications. An on-site workshop followed, where both internal and external stakeholders shared ideas and developed plans to enhance ILS.

Table 12 below outlines the key steps and their outcomes.

Table 12: Outline of the workshop activities

Stage	Activity
0: Setting the stage	**1. Lunch-Break @ HTW Berlin**

The Lunch-Break "Informal Learning Spaces @ HTW Berlin" served as the kickoff event for fostering a learning community at HTW Berlin. The **objectives** of this workshop were:

- **Awareness of ILS importance:** To familiarize HTW Berlin stakeholders with ILS, highlighting their crucial role in promoting social integration and well-being within the university community.
- **Mapping existing ILS**: Participants conducted mapping exercises to identify and discuss the existing ILS across HTW campuses, helping to visualize and assess the current landscape.
- **Networking and idea exchange**: The workshop provided a platform for stakeholders from various university faculties to connect, discuss their roles and interests related to ILS, and share ideas and initiatives, thereby promoting an environment of collaboration.
- **Build a foundation for ongoing collaboration**: Utilizing the Miro Board (a digital platform), the workshop established a base for continuous dialogue and cooperation among stakeholders, promoting sustained efforts to develop and enhance ILS.

2. Hybrid Forum (Multiplier Event with LC members)

The Hybrid Forum (Multiplier Event) built upon the discussions initiated during the Lunch-Break event and expanded its scope by including external stakeholders. The objectives of this workshop were:

- **Deepening understanding:** The forum presented a greater scale of the NIILS project's findings, enhancing stakeholders' comprehension of challenges and opportunities that come with promoting ILS.
- **Strategic planning and visualization:** Participants gave feedback on the transfer products of the NIILS project: the learning community and the mapping platform to plan future enhancements for ILS brainstorming improvements and discussing implementation strategies.
- **Expanding stakeholder engagement:** Including external guests broadened the discourse in the workshop, introduced new perspectives and promoted networking beyond HTW Berlin.

1: Empathize	**1. Lunch-Break @ HTW Berlin** **Division of Participants:** - Participants were grouped based on their departmental roles and interests to facilitate focused discussions on ILS to their specific contexts and influence at the university. - The Lunch-Break session was exclusively for internal members of HTW Berlin. The invited stakeholder groups included: - University management - Department heads - Student representation - Central Departments: international office, lecturer service center, equality office - Central university administration: student services, center for student counseling & career service, technical services - Central facilities: library **Key outcome:** The kick-off event resulted in the development of an interactive Miro board, which was populated with post-its featuring questions, ideas, and potential strategies aimed at developing the learning community and promoting

ILS. The Miro board was shared with the LC, where members have continuous access to it.

2. Hybrid Forum (Multiplier Event with LC)

Division of Participants:

- Although the forum itself was conducted in a hybrid format, workshops involving strategic planning and discussions were conducted only with the on-site participants to ensure a more effective collaborative setting on-site.
- It included both internal stakeholders from HTW Berlin and external guests, expanding the dialogue and collaboration. The stakeholder groups were categorized in three groups:
- Decision-makers: University management, departmental management
- Enablers & implementers: administrative/service departments, facility management, IT, student administration
- Users & co-creators: students, lecturers

Key outcome: The workshop focused on structuring the LC by defining key roles, brainstorming communication channels, identifying bottlenecks within stakeholder participation when it comes to promoting ILS in higher education. The forum not only deepened the understanding of a LC but also structured the approach for future initiatives concerning promoting LC related to ILS.

2: Define	**Shared vision for the Learning Community at HTW Berlin:** The vision for HTW Berlin is to establish a collaborative and inclusive community that encompasses all stakeholders (students, faculty, administrative staff, and external partners, etc.) who are dedicated to enhancing and expanding ILS on campuses. The initial focus of the LC is on connecting stakeholders who are either interested or already engaged in projects related to promoting learning spaces on campuses, aiming to prevent isolated efforts and enhance collaboration among existing and planned projects that may otherwise operate independently. This approach seeks to integrate their unique ideas and perspectives to develop dynamic, accessible, and innovative learning spaces.
3: Ideation	During the Lunch Break and Hybrid Forum, part of the workshop involved preparing an operations plan for the LC, focusing on implementing and promoting ILS at HTW Berlin. The following summary clusters key questions and their respective answers (examples) of stakeholders into categorized needs and effective communication strategies. This structured approach was essential for guiding discussions and generating actionable outcomes from the workshop. **Question: What information is particularly important (to promote ILS)** 6. **…for leaders and decision-makers?** • Urgency, sense-making and objectives of the project. • How the goals of the project align with the goals of the university. • Marketability of the project and potential competitive advantage for the university. • Personal and monetary costs associated with the implementation (budget plan). • Expected outcomes or effects of the implementations. • Defined steps and planning for implementations. 7. **…for users and co-creators?** • Options for personal input or customization via a wish box.

- Physical and organizational aspects of existing ILS.
- Existing research on the topic of ILS.
- Existing projects, groups, communities that deal with ILS.
- Transparency concerning the status quo of ILS.

8. **…for enablers and implementers?**
- Specific materials and resources required for projects.
- Anticipated challenges and proposed solutions.
- Benchmark data or comparison numbers from other universities.
- Good practice examples.
- Students' needs.
- Rules and regulations by the university.
- Budget overview and financial opportunities/constraints.

Question: What communication channels work (to promote ILS):

9. **…for leaders and decision-makers?**
- Collaboration platforms tailored for managerial and strategic planning.
- Professional networks and conferences and presentations, such as HRK (German Rectors' Conference or similar bodies).

10. **for users and co-creators?**
- First-year student welcome packages (that provide essential information and resources regarding ILS.
- Faculty-specific discord channels or student organizations (ASTA, Buddy program) to foster ongoing discussions and community building.
- Involving students more into the topic of ILS with ILS-related projects as part of seminars, lectures, etc.

11. **…for enablers and implementers?**
- Direct surveys or participation in broader surveys to gather targeted feedback.
- Interactive workshops that engage stakeholders directly and facilitate hands-on collaboration.
- Department / faculty council.
- Informal gatherings with colleagues of different faculties.

4: Prototype and test	Due to the broad scope and complexity of ideation plans, extensive prototyping and testing have not yet been conducted on a large scale. The recent initiation of these efforts and the constrained timeline have limited the opportunity for thorough testing and refinement. Given the diverse needs of the stakeholder groups (as outlined in 3: Ideation above) and the comprehensive nature of the measures, a longer timeframe is necessary to effectively implement and evaluate these plans. While different stakeholder needs have been collected in the workshop, ongoing development and iterative testing are suggested to finalize and operationalize the plan for the LC.
Conclusion & Next Steps	**Self-establishment of a Learning Space Community at HTW Berlin** The LC events seemingly sparked the beginning of the formation of a self-organized LC at HTW Berlin. Key stakeholders from different tiers of departments at HTW Berlin have now established a formal group dedicated to enhancing learning spaces on campuses. This initiative extends beyond the original scope of the NIILS project. The HTW-NIILS team has facilitated this transition by providing the group with continued access to the Miro Board utilized during the LC event. This platform serves as a central hub for ongoing interactions, enabling stakeholders to maintain active communication, share resources, and collaborate effectively. This development

	marks a significant shift from the NIILS project-led structured events to a self-directed, enduring community that fosters inclusive ILS.

The LC at HTW Berlin is designed to foster collaboration and inclusivity among a diverse group of stakeholders: including students, faculty, administrative staff, and external partners, all dedicated to enhancing and expanding ILS on campuses. Its focus is to connect stakeholders from various projects, promoting integrated and ILS through shared efforts. This initiative aims to transform isolated activities into collaborative, dynamic efforts to promote ILS.

Table 13 below outlines the key elements of the resulting operations plan.

Table 13: Operations plan of the learning community at HTW

Conceptual framework	Operational elements	Definition of the element co-created during the workshop
Shared vision	Objectives	To build a robust and inclusive LC at HTW Berlin that promotes ILS initially, focusing on establishing a strong foundation within the university. This foundational step aims to consolidate internal connections and stakeholder engagement.
Communication between the actors of community	Modes of communication	Utilization of digital platforms like Miro Board for continuous dialogue. Stakeholders also expressed the need for collaboration platforms tailored for strategic planning, faculty-specific Discord channels, and direct surveys for targeted feedback.
Feedback mechanisms	Evaluation and feedback	Feedback will be collected via digital tools like question and answers on the Miro Board. The self-establishing LC at HTW Berlin is now planning periodic stakeholder meetings to discuss ongoing progress and challenges.
Diversity of actors	Membership	Open to all HTW Berlin stakeholders including students, faculty, and staff, with efforts to involve also external partners (good practice examples). Membership can be initiated through invitations or requests to join.
Inclusivity	Measures for inclusion	Inclusion strategies include ensuring accessibility of (hybrid) meetings and digital platforms, facilitating diverse stakeholder engagement, and addressing specific needs of various community members.
Trust based relationships	Moderation	Rules of communication will include respect for all participants' opinions, confidentiality where required, and compliance to a collaborative, constructive dialogue approach.

	Collaboration and peer support	Emphasis on peer-to-peer learning and support structures within the community. Collaborative projects and joint initiatives will be encouraged to enhance learning and integration across disciplines and faculties.
Use of technologies	Digital tools	Continued use of the Miro Board and other collaborative tools.
Access to space	Space for face-to-face meetings	No designation of specific areas within HTW Berlin campuses for community meetings, rather a flexible use of places on demand.
Support of the university	Staff support	Participation in the LC is purely voluntary; Some members are engaged due to their job tasks, e.g. student services (central, department)

Convening of the learning community

The LC was convened primarily using targeted emails sent to both internal stakeholders and potential external stakeholders which are known as relevant actors at the university. Additionally, promotional materials such as posters and flyers were distributed across HTW Berlin campuses to maximize visibility and participation at the events.

Initial operations of the learning community

The HTW LC operates in a hybrid (a)synchronous format to accommodate both online and offline engagement, ensuring broad accessibility. Since its initiation, there have been two major events:

- **"Lunch-Break Informal Learning Spaces @ HTW Berlin"**: This initial event had 13 stakeholders from diverse departments at HTW participating, emphasizing the event's relevance to enhancing informal learning spaces.
- **"Hybrid Forum"**: The subsequent event involved a total of 46 participants, with 18 attending on-site and 28 participating online. In total, 17 participants were from HTW Berlin.

Conclusions, recommendations and evaluation of the learning community

After implementing the design thinking methodology and creating LC'S operations plan, it is important to evaluate the level of LC based on the elements of the co-creative learning ecosystems discussed in the previous chapters and define different levels of its maturity.

Considering the early phase of implementation, the LC at HTW Berlin is more classified in the **Nascent** stage. The community is still forming its foundational elements, such as establishing effective communication channels, and developing trust among its members. As the community and its activities evolve, moving towards more structured and consistent engagement will be crucial for progressing to more advanced stages of emergent and maturity.

Template for self-evaluation of the learning community at HTW Berlin

	Nascent	**Emergent**	**Mature**
Process			
Shared vision	Initial dialogues are underway to align goals and build trust among stakeholders.		
Communication between the actors of community	Communication is developing, with efforts to move beyond individual projects and enhance collaborative exchanges across the community.		
Feedback mechanisms	Initial feedback mechanisms work via meetings and the Miro board platform).		
Participants			
Diversity of actors	Efforts to engage a diverse range of perspectives are in progress.		
Inclusivity	Inclusivity is a work in progress, with ongoing initiatives to promote broader participation and engagement among all members (and hierarchy levels).		
Trust based relationships	Building trust is a priority but is still in progress.		
Resources and support			
Support of the university	The university management is interested in the development of the LC; there is growing recognition of the community's importance and potential for impact. Aspects to support the nascent LC are to be discussed in detail.		
Access to space	Efforts are being made to secure a digital space that support collaborative and co-creative learning activities among stakeholders (Miro board).		
Use of technologies	See above.		
Context of implementation			

> **Social networks, institutional arrangements, and policies that affect the community:**
>
> **Engagement with institutional policies and social networks is in a very early phase and is mainly about identifying opportunities and challenges for integration.**

5.3. Initiating learning communities in Akdeniz University

Establishing a shared vision and defining the operations plan (initial workshop)

The starting point of the community development was the establishment of a shared vision followed by definition of the community's operations plan. In achieving this goal, the AKD team decided to apply **design thinking** methodology.

At AKD The Learning Community Workshop took place at Faculty of Education meeting room on 20 March 2024 and lasted around 1.5 hours (10:00-11:30). Ten participants participated in the workshop. The participants were invited by e-mail and by announcing the workshop details (goal and date etc.) to the student groups. Three graduate students, four administrative staff, and three lecturers participated in the workshop.

The second meeting of the learning communities that graduate students organized themselves took place at Faculty of Education Seminar room on 8 May 2024 the day after multiplier event and lasted around 1 hour.

Table 14 below outlines the key steps and their outcomes.

Table 14: Outline of the workshop activities

Stage	Activity
0: Setting the stage	Gathering ideas from the participants on potential designs for a "Learning Space Community" for two faculties (Faculty of Education and Faculty of Letters) was the goal of the first workshop section.
	After introducing the project, all the participants were asked to introduce themselves. Later the goal of the workshop was defined. Starting the co-creative creation of a "Learning Spaces Community" at Akdeniz University Faculty of Education and Faculty of Letters with everyone who is interested in learning about, designing, and using (physical, virtual, hybrid, formal, or informal) learning spaces.
	Key outcome: warm-up
1: Empathize	In the workshop the participants (n=10) were divided into two groups, five people in each group. Each group worked on two topics.
	The workshop was set up in the following three steps:
	Step 1: Spend around ten minutes gathering personal ideas. The following questions were distributed to the participants, each question was written on a blank paper and the participants were asked to put write their answers on that papers under the questions:
	• How can you help this kind of community, or what would you like to contribute? (For example, knowledge, assets, relationships, experience, etc.) • What piques your interest in a "learning space community" and what problems may this kind of community help with? • How ought such a community to be set up? (For example, MS Teams groups, email lists, network meetups, themed cafés, etc.)

Step 2: Group discussion at the table (around 10 minutes) The following guiding questions were used to help participants record their answers on a flipchart while they quickly discussed their own collected ideas and considerations at their table:

- Do your collected thoughts have any commonalities, overlaps, or concerns that connect them?
- What concepts or plans do you have for a "learning space community" and how it might be set up? (Possible objectives, pursuits, etc.)

Step 3: Results are briefly presented (around 5 minutes). Every table was requested to provide a brief summary of the subjects and themes covered at their table for the benefit of all attendees.

The main conclusions of the workshop can be summarized as follows:

Possible aims and scope of a 'community of learning spaces'

- Review of existing projects and spaces,

- Analyzing the needs of different user groups on campus

- Learning different stakeholder perspectives

- Probably budget for small budget implementation projects

- Connections, networks and relationships with management

First ideas on how such a community could or should be organized

- Face-to-face meetings (e.g. quarterly or semi-annually) + digital tools for continuous change

- Joint activities such as excursions, visits, examinations, etc.

- Although the ultimate goal is to involve all faculties, for the time being, a project in which two geographically close faculties act jointly is targeted.

Key outcome: First list of ideas for the scope, contributions and organization of a community of learning spaces for the two faculties in the AKD

2: Define	As a first step to define the vision of the learning community, participants who were in no hurry to leave after the learning space workshop (6 people) stayed longer to discuss and exchange ideas. The participants shared new thoughts they wanted to add or ideas they liked. The workshop results were summarized by the NIILS project team and sent to all workshop participants afterwards. *Key outcome: the vision of the learning community defined*
3: Ideation	*Once the basic vision of the learning community was defined together, the groups worked on the preparation of the operational plan for the community. In this context, the groups brainstormed potential solutions for the following issues* *What should the learning community look like?* *Who should be able to participate?* *What resources are available and what is needed?* *How will it function online?* *Where can it meet?* *This step was addressed in a face-to-face meeting (2nd meeting) organized by the group of postgraduate students (6 students), which later became a larger group through the efforts of 3 postgraduate students who participated in the first workshop. The participants*

	preferred to work on the operation plan together in a large group. For the preparation of the operation plan, the following guiding questions were posed to the participants: Shared vision: What is the goal of the 'Learning Spaces Community'? · Communication between the participants: How is communication organized? What means of communication are used? · Feedback mechanisms: (How) is feedback obtained? · Diversity: Who are the members of the community? · Inclusivity: What measures can be taken to ensure the inclusivity of the community? · Trust-based exchange: (How) is moderation organized? Which communication rules are applied? · Use of technologies: Which digital tools are used? · Spatial infrastructure: Where do face-to-face meetings take place (if planned)? - *Support from the university: What (further) support is needed from the university?* *The group of 6 graduate students discussed these questions within the group in this second meeting and they were asked to agree on one or more suggestions for each question and to record them in keywords. The feedback was then incorporated into the first draft of an operation plan.* *Key outcome: initial list of solutions for the operations plan defined*
4: Prototype and test	Each group drafted a brief operations plan for the community in line with a template for operations plan prepared by MRU including (based on the conceptual framework: Objective, Modes of communication, Membership and moderation, Space, Collaboration and peer support, Feedback. *Key outcome: final operations plan of the learning community*
Conclusion & Next Steps	Outlined the next steps in formalizing and implementing the community operations plan based on the workshop's outcomes.

Introduction to the learning community at AKD. Workshop 1

Table 15 below outlines the key elements of the resulting operations plan.

Table 15: Operations plan of the learning community at AKD

Conceptual framework	Operational elements	Definition of the element co-created during the workshop
Shared vision	Objectives	The Learning Community seeks to establish avenues for non-formal education. This ought to be accommodating to less affluent kids' requirements, cozy, easily accessible, and multipurpose. Members of this community should include instructors, administrators, and students from both partner areas and faculties.
Communication between the actors of community	Modes of communication	It is recommended to arrange meetings once a month. It is best to make significant decisions informally, face-to-face, on postgraduate course days. In addition, WhatsApp groups should be used to foster contact. Moreover, an Instagram page can be created, via which the work can be shared, and anyone interested in joining the group can be updated about upcoming events. If they would choose, administrators and lectures can join the WhatsApp group. But before the large-scale meetings that are scheduled to take place each semester, there is a plan to correspond with them via email.
Feedback mechanisms	Evaluation and feedback	A survey to be prepared online will be used to gather input. Posters are going to be hung in casual learning contexts to get feedback. There will be QR codes on these posters that will open the survey link.
Diversity of actors	Membership	The following entities and persons must be community members:

		Graduate students, undergraduate students, faculty of education management, faculty of letters management, administrative staff, lecturers, disabled unit representative, and representative of the unit for international students
Inclusivity	Measures for inclusion	Through the integration of many levels of hierarchy across all domains.
		Through catering services provided by the canteens.
		Through fostering relationships between undergraduate and graduate students.
		Through fostering relationships between students with fewer opportunities (i.e. international students, disabled students)
Trust based relationships	Moderation	The community members will decide what information can be shared in the WhatsApp group, as well as other guidelines that must be followed. If there is any conflicting information, posts that violate the guidelines will be removed and the author of the post will be notified.
	Collaboration and peer support	At AKD learning community is mainly lead by graduate and senior students. Other students as well can join, support and collaborate to the community.
Use of technologies	Digital tools	NA
Access to space	Space for face-to-face meetings	The faculty administration assigned faculty lounge area and seminar room graduate room face to face meetings.
Support of the university	Staff support	NA

Convening of the learning community

For the first meeting we used e-mails and posters, and we also announced it to the students before their courses.

For the second meeting, our graduate students volunteered for the second meeting and for the formation of the core members of the learning community. Students started the community work by telling their friends directly or via WhatsApp.
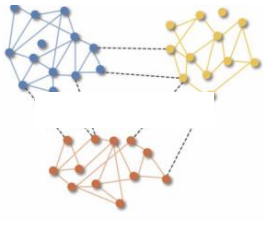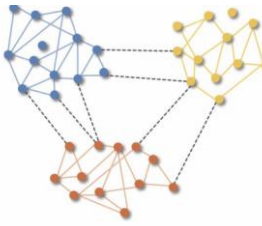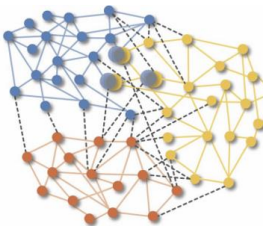
Initial operations of the learning community

For the time being, the learning community is in its initial phase and is progressing mostly with the participation of students and under my supervision. Most of the meetings are face-to-face. In the online environment, developments are shared, and plans are made. However, although the faculty secretaries of both faculties do not attend the meetings regularly, they are informed about the decisions of the meetings and offer support where they can support. It has not yet been possible for faculty members to provide continuous support, except for me as the coordinator.

Conclusions and evaluation of the learning community (including important recommendations for the guidance material)

After implementing the design thinking methodology and creating learning community's operations plan, it is important to evaluate the level of learning community based on the elements of the co-creative learning ecosystems discussed in the previous chapters and define different levels of its maturity. The AKD evaluation of learning community can be seen in table below.

Self-evaluation of the learning community at AKD

	Nascent	Emergent	Mature
Process			
Shared vision		x	
Communication between the actors of community		x	
Feedback mechanisms	x		
Participants			
Diversity of actors		x	
Inclusivity		x	
Trust based relationships		x	
Resources and support			
Support of the university		x	
Access to space		x	
Use of technologies	x		
Context of implementation			
Social networks, institutional arrangements, and policies that affect the community.			

5.4. Initiating learning communities in Sapienza

This paragraph describes the first workshop on Learning Communities, held in the afternoon of March 14, 2024, immediately after the Multiplier Event for the NIILS project held in Rome. This coincidence allowed participants to fully immerse themselves in the main themes, principles of the NIILS project and the set objectives. In addition, participation in the Multiplier Event offered them the opportunity to compare themselves with a wider group of individuals, explore innovative aspects to be developed and acquire an overview of existing experiences in the field of ILS at national and city level of Rome. In this way, a empathize process between people and identification with the project had already been started and was further strengthened with the working group afterwards. Furthermore, the simultaneous participation in the Multiplier Event allowed us to involve a greater number of participants, who were then organized into two distinct groups, each composed of students, stakeholders, lecturers, and academic staff.

The only difficulty encountered was the inclusion of students with fewer opportunities. We were only able to involve one foreign student, for whom the language represented a significant barrier. This highlights the need for more inclusive strategies to ensure the participation of a wider range of students, overcoming physical, linguistic, and cultural barriers, even at events.

At the end of the morning Multiplier Event, the two workshops for the Learning Communities began. Thanks to the good number of participants, to promote active participation and reduce initial embarrassment, especially among students, it was decided to divide the participants into two smaller groups. In fact, for many of them, it was the first opportunity to interact directly and on an equal footing with lecturers and administrative staff, in the context of collaborative discussion. This choice allowed to create a more intimate and favorable environment for sharing ideas and opinions, facilitating the empathize phase.

The participants were divided into groups as follows:

Group 1 - 10 people, including 1 lecturer/moderator, 2 lecturers, 6 students (one of whom with fewer opportunities) and 1 representative of the Sapienza Building Management Area.

Group 2 - 12 people, including 1 lecturer/moderator, 3 lecturers, 6 students, 2 members of the Sapienza administrative staff.

During this workshop, the preparation phase (phase 0), and the empathize phase (Phase 1) were completed for each group. Phase 3 of definition was then started.

After collecting the main ideas and themes, a comparison between the two initial groups was carried out. The aim of this comparison was to synthesize the emerging perspectives and reach common conclusions**.**
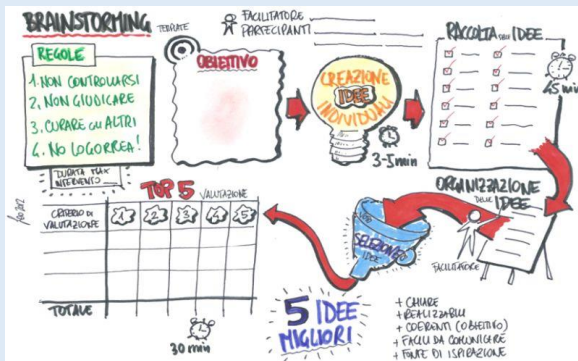
Table 16 below outlines the key steps and their outcomes.

Table 16: Outline of the workshop activities

Stage	Activity
0: Setting the stage	At the end of the Multiplier Event, organized with the aim of disseminating the project results and involving new stakeholders, a concluding session was held dedicated to the presentation of the afternoon workshop on Learning Communities, to involve further people in the participation. In this context, the proposal to create a co-creative learning community to deepen the theme of informal learning spaces from different perspectives was presented. The details were presented, outlining the general and specific objectives. Subsequently, the procedure of the afternoon workshop was illustrated to the participants, which included: • An introductory session dedicated to the presentation of the participants and the definition of the workshop objectives. • The division into working groups. • A brainstorming activity to collect ideas and proposals on the topics to be deepened within the community. • A plenary session for the presentation of the results of the group work and for the start of a collective discussion on future research and action directions.
1: Empathize	The workshop used an empathize process that was autonomously structured at different levels: • Preliminary empathize at the event: Participants had already had the opportunity to empathize during the morning at the Multiplier Event, gaining a general understanding of the challenges and opportunities related to Learning Communities and ILS. • Empathize in small groups: The division into small groups allowed for a greater depth in exploring the specific needs and experiences of each user segment (students, academic staff, representatives). • Empathize with students: Students had the opportunity to freely express their needs and expectations regarding Learning Communities, in a safe and inclusive environment. • Empathize of the academic staff: The academic staff contributed to the discussion by presenting their point of view, highlighting their role as intermediaries between students and university administrators. • Empathize of the representatives (stakeholders): The representatives shared their experiences regarding the difficulties and bureaucratic slowdowns that can hinder the regeneration of spaces and the creation of effective Learning Communities and NIILS.
2: Define	After identifying issues, a brainstorming phase was conducted to identify topics and characteristics that learning communities should have. Even in this phase, the participants expressed their needs. Initially, the participants were encouraged to express themselves freely; subsequently, the discussion was guided. During this phase, small groups spontaneously formed in which each user segment discussed common ideas. Phase 1: Free brainstorming (Figure 4): Participants were invited to freely express their ideas and proposals, without constraints or restrictions. Phase 2: Guided discussion: A tutor guided the discussion, directing it towards the fundamental themes of the NIILS project and facilitating the convergence of ideas.

	Phase 3: Work in small groups: Participants spontaneously divided into small groups, within which each user segment had the opportunity to deepen common ideas and develop specific proposals.
	To stimulate creativity and active participation, various facilitation and visualization techniques were used:
	Colored sticky notes: Participants were given colored sticky notes on which to write keywords related to their ideas.
	Whiteboard: The sticky notes were then attached to a whiteboard to allow for a collective view of the ideas that emerged and the identification of common keywords.
	Concept maps: At the conclusion of the three phases of empathize, brainstorming and work in small groups, concept maps were created. The concept maps made it possible to connect the different ideas and themes that emerged, creating a synthetic and organized visual representation of the priorities and proposals for the development of Learning Communities.
3: Ideation	Discussion allowed to identify a set of key themes that should be considered in the design and development of effective Learning Communities and NIILS.
	Topics can be grouped into different categories:
	1. Hierarchized and multifunctional spaces:
	The need to create multipurpose spaces that can be adapted to different needs, while maintaining a hierarchical structure that defines their functions and priorities.
	The importance of considering the accessibility and usability of spaces.
	2. Environmental sustainability:
	Adoption of eco-compatible solutions in spaces design and management, favoring the use of recycled materials and renewable energy sources.
	The promotion of sustainable behaviors among users of Learning Communities, through awareness-raising initiatives and the adoption of concrete measures, such as differentiated waste collection and energy saving.
	3. Digitization and technological innovation:
	The integration of digital technologies into Learning Communities spaces to facilitate communication, collaboration, and sharing.
	The creation of online platforms dedicated to Learning Communities to promote the sharing of information, resources, and opportunities.
	4. Metaverse:
	Develop an interconnected virtual environment with physical spaces, which allows for real-time exchanges and collaborations, both synchronous and asynchronous, in 3D space.
	5. Urban regeneration and enhancement of the common heritage:

	The use of NIILS is also seen as a tool for urban regeneration and the enhancement of disused or undervalued areas.
	The promotion of greater usability of controlled spaces, but open to the public and the community, even outside university hours, favors the creation of meeting places and intercultural exchange.
	6. Inclusion and accessibility:
	Creation of inclusive and accessible spaces for everyone, regardless of the physical, cognitive, or social abilities of users.
	Adoption of measures to ensure the active participation of all members of the community, promoting diversity and equity of access to resources and opportunities.
	The enhancement of individual and cultural differences as elements of enrichment for the community.
	7. Financing and investment opportunities:
	Aligning Learning Communities and NIILS with the eligibility criteria for funding and investment provided by Next Generation EU and other innovation and social cohesion support programs.
	The search for partnerships with public and private entities for the co-financing of projects and initiatives related to Learning Communities and NIILS.
	We are currently at this stage of the development of Learning Communities. We are planning to organize a second meeting, but now the realization of this event depends on the availability of resources and time.
4: Prototype and test	Conclusions emerged from the workshop provide a solid basis for the development of future initiatives in the field of learning communities. It is essential to continue to promote collaboration among stakeholders and maintain an inclusive and sustainable approach.
	In addition, ideas and solutions proposed during the workshop must be further developed and tested, also considering the funding opportunities and resources available.
	For these reasons, participants imagined next steps for the advancement of learning communities, outlining the development of a concise operational plan for their own Learning Community. This plan is based on the definition of general and specific objectives aligned with the conceptual framework and expected benefits. Protocols will have to be established for the sharing of information and the management of discussions and feedback. A physical, virtual or hybrid space will also need to be identified, in which the activities of the nascent Learning Communities will take place, with a calendar of meetings.
Conclusion & Next Steps	Topics that emerged from the workshop offer a solid foundation for design and development of Learning Communities that can meet needs of users and contribute to the creation of a more sustainable, inclusive, and innovative society. Collaboration between universities, local authorities, businesses, and citizens is essential to transform these ideas into concrete projects and to bring to life NIILS that represents a reference model for the future of learning.

(Figure 4). On the left image illustrating the process followed during the empathize and participant brainstorming phase. Some basic rules have been established regarding the freedom of expression, always considering respect for others.

(Figures 5,6). Below. These images are likely photographs that capture various moments from the workshop.
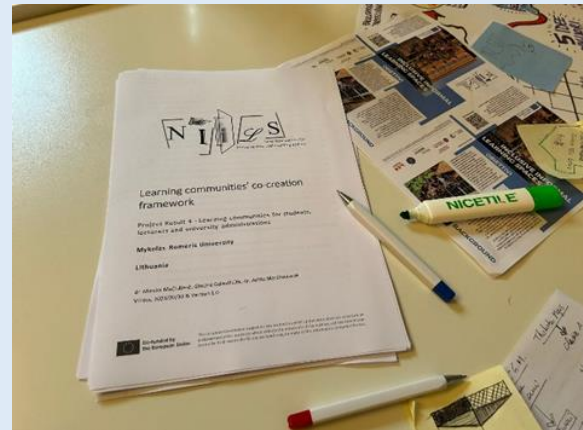
Table 17 below outlines the key elements of the resulting operations plan.

Table 17: Operations plan of the learning community at Sapienza

Conceptual framework	Operational elements	Definition of the element co-created during the workshop
Shared vision	Objectives	Learning Communities pursue the goal of creating and promoting informal learning spaces within universities. The idea is to promote spaces that are hierarchical yet flexible, accessible, and inclusive, environmentally sustainable, digital, and technological, and collaborative among different types of users.
Communication between the actors of community	Modes of communication	Communication will mainly take place through a platform already in use at Sapienza University, namely Google Classroom. This platform, owned by Google, offers several features that are particularly suitable for the needs: File sharing: Different types of files, including documents, presentations, images, and videos, can be easily shared. Appointment management: Google Classroom allows the creation and management of a shared calendar, where members can schedule appointments. Video calls: The platform integrates the ability to make video calls with a shared link, facilitating online meetings, group discussions, and brainstorming sessions. Instant messaging: Google Classroom includes an instant messaging feature that enables members to communicate in real-time. This functionality promotes informal communication and immediate exchange of ideas within the group. Integration with email: Google Classroom is integrated with the email inbox of all participating users. This means that notifications regarding activities and discussions will be automatically sent to the email address of each member.
Feedback mechanisms	Evaluation and feedback	Users will be invited to provide their feedback after each meeting, always through the Google Classroom platform and instant messaging, for immediate exchange and visibility.
Diversity of actors	Membership	The Learning Community should consist of members who represent the diversity of the university community in terms of background, experiences, opinions, and skills. The meetings are open to all who wish to participate, including students, academic staff, professors, student representatives, and technical staff from the Sapienza building management area. Occasionally, external members such as representatives from public or private entities may be invited to showcase ongoing positive examples in the city of Rome, particularly by the municipal administration.
Inclusivity	Measures for inclusion	We propose the implementation of various strategies aimed at:

		Physical accessibility: Meeting spaces for in-person gatherings will also be chosen based on accessibility for individuals with physical disabilities.
		Technological accessibility: Digital platforms used for online meetings and communication are accessible to individuals with sensory disabilities.
		Inclusive communication formats: Communication materials such as presentations, documents, and messages will be made as accessible as possible to individuals with cognitive and learning disabilities. This includes the use of clear and concise language, explanatory images and graphics, and alternative text formats.
		Multilingual communication: Communication materials and meetings should be available in multiple languages to facilitate participation of individuals from diverse cultural and linguistic backgrounds.
Trust based relationships	Moderation	In order to promote an environment of effective, respectful, and inclusive communication, the following norms are defined:
		1. Mutual respect and appreciation of diverse opinions:
		All members are required to respect the opinions, ideas, and viewpoints expressed by other participants, even when divergent from their own.
		Constructive criticism and the exchange of differing ideas are encouraged, provided they are conducted with respect and without personal attacks.
		2. Confidentiality and protection of sensitive data:
		Information shared within the Learning Community, both during in-person discussions and online, must be treated with confidentiality.
		Personal data of LC members must be protected in accordance with current privacy regulations.
		Sharing of confidential or sensitive information with individuals outside the LC is permitted only with explicit authorization from the parties involved.
		3. Collaborative and constructive approach:
		Communication within the LC should be based on collaborative and constructive dialogue, aiming to reach shared solutions and mutual learning.
		Active listening, empathize, and willingness to understand different perspectives are encouraged.
		The goal is to create a safe and positive learning environment where all members feel free to express their ideas and contribute to the discussion.

	Collaboration and peer support	It is expected that support will be provided by student representatives and some collaborators from the academic secretariat of the Faculty of Architecture.
Use of technologies	Digital tools	As already described in the "Modes of communication" field.
Access to space	Space for face-to-face meetings	To ensure flexibility and adaptability to the different needs of the Learning Community, an itinerant approach is proposed for selecting venues for meetings.
Support of the university	Staff support	As already described in the "Collaborations and peer support" field.

Convening of the learning community

In order to promote active participation and engage a wide range of stakeholders, several strategies have been adopted:

1. Targeted email communication: Targeted emails have been sent to internal stakeholders identified as potential members based on their roles, interests, and expertise.

2. Promotional materials: Announcements have been posted on major social media platforms and the university website to expand participation to non-targeted groups.

Initial operations of the learning community

The Learning Community is currently in its initial development phase, with two successful meetings conducted (two groups). These inaugural meetings have provided an important opportunity for LC members to get to know each other, share ideas, and define common goals.

Conclusions, recommendations and evaluation of the learning community

From the analysis of the conducted discussion, some key conclusions are drawn outlining the initial steps for building effective learning communities.

1. Priority in defining spaces:

An aspect that emerged strongly is the need to preliminarily define the physical spaces that will host the learning communities. This deliberate choice highlights the importance of a suitable physical environment to foster collaboration, sharing, and idea exchange. The emphasis placed on this aspect, also evident due to the presence of architecture students and professionals in the first meeting, underscores the crucial role of spaces in shaping interpersonal dynamics and community cohesion.

2. Collaborative dynamics and idea exchange:

Keywords emerging from the discussion highlight the centrality of certain indispensable dynamics for the proper functioning of learning communities. These include connection, confrontation, and accessibility. Connection, understood as the ability to exchange information and ideas, is a fundamental element for collaboration and collective growth.

Confrontation, on the other hand, allows for the comparison of different perspectives and generates new knowledge through constructive debate. Accessibility, although not explicitly mentioned as a keyword, is implicitly included in the broader concept of inclusion.
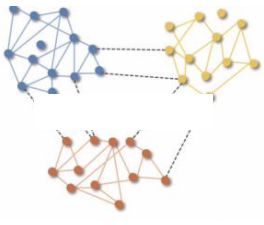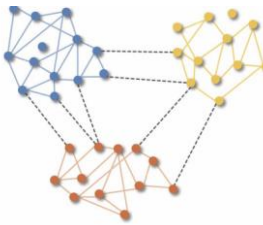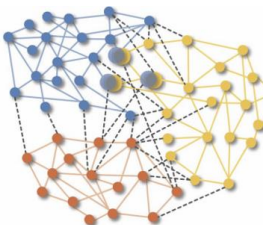
3. Inclusion as a fundamental value:

Inclusion emerges as a guiding value for learning communities. This concept, broader than accessibility, aims to create an environment where every individual, regardless of their characteristics or opportunities, feels an integral part of the group. The centrality of inclusion testifies to the commitment to building a cohesive and welcoming community where every member feels valued and can actively contribute to the learning process.

4. Initial development phase:

It is important to emphasize that the learning community is still in its initial development phase. Objectives and creation methods require a more precise and articulated definition. This preliminary phase of reflection and analysis represents a fundamental step in building a solid and lasting community.

Template for self-evaluation of the learning community at Sapienza university

	Nascent	Emergent	Mature
Process			
Shared vision	Common goals have been identified, and the next steps have been established. All the goals, initially formulated using keywords, need to be further developed and strengthened.		
Communication between the actors of community	The communication, initially characterized by timidity and reserve, is progressively developing and expanding, with efforts aimed at transcending individual viewpoints and enhancing collaborative exchanges within the community.		
Feedback mechanisms	The initial feedback mechanisms initiated during the workshop. Subsequently, it will be possible to share files in the folder named "pensatoio"		

	(place where think together), where users can express spontaneous ideas and will have a free space for comments		
Participants			
Diversity of actors	The objective is to involve members from all disciplinary areas that operate within the context of spaces, alongside students from various faculties. Additionally, efforts are being made to invite external members, such as representatives from the Municipality of Rome, for subsequent meetings to illustrate positive examples currently underway in the city.		
Inclusivity	Inclusivity within Learning Communities represents a dynamic and continuously evolving process, characterized by ongoing initiatives aimed at promoting broader participation and engagement among all members, regardless of their hierarchical level.		
Trust based relationships	Trust is recognized as an essential element for the success of Learning Communities and the creation of a collaborative and productive environment		
Resources and support			
Support of the university	There is a growing interest from the university administration in the development of the Learning Community. This interest reflects an increasing awareness of the importance and potential impact of Learning Communities for the development of NIILS.		
Access to space	An itinerant approach is proposed for selecting meeting spaces to ensure flexibility and adaptability to the various needs of the Learning Communities. Accessibility is guaranteed through the support of the university and administrative staff.		

Use of technologies	Efforts are underway to implement a dedicated digital space to support co-creative Learning Communities, for the sharing of ideas and hybrid meetings. The chosen platform is Google Classroom, which also provides shared spaces for viewing and editing ideas, projects, and concepts in real-time.		

Context of implementation

Engagement of institutional policies and social networks is in its early stages, with efforts underway to integrate university decision-makers (the rectorate) as much as possible into the project. Analysis is underway to understand how the social network landscape can be integrated within learning communities. This approach is being implemented in close collaboration with the student community, given their propensity, as new generations, to be more active on social media.

Conclusions

The starting point of the community development was the establishment of a shared vision followed by definition of the community's operations plan at all universities. Design thinking methodology was also applied by all universities. The pilot workshop was conducted in June 2023 in the premises of Mykolas Romeris university with an attendance of 12 participants (8 students, 2 members of academic staff, 2 members of non-academic staff at MRU). The workshop at UWK was divided into 2 parts. An initial workshop, designed as a "learning space breakfast", was held on 7th of December 2023. It lasted 2 hours (from 10:00-12:00) and 17 stakeholders from different areas participated. Second workshop, that was embedded in the National Multiplier Event held at UWK on 30th of January 2024. Nine people were involved in this workshop with the aim to develop an operations plan for a "learning space community" at the UWK. The development of the Learning Community at HTW Berlin began with the "Lunch-Break Informal Learning Spaces" event held on December 8, 2023, 13 stakeholders were participated. The second event "Hybrid Forum" on March 5, 2024 (Multiplier Event) was initiated, 18 attendees on-site at the Wilhelminenhof campus of HTW Berlin and 28 participants online, total 46 participants were attracted. At AKD The Learning Community Workshop took place at Faculty of Education meeting room on 20 March 2024 and lasted around 1.5 hours, ten participants participated in the workshop. The second meeting of the AKD learning communities that graduate students organized themselves took place at Faculty of Education Seminar room on 8 May 2024 the day after multiplier event and lasted around 1 hour. The workshop on Learning Communities with 22 participants at Sapienza was held in the afternoon of March 14, 2024.

All workshop activities were focused on given stages at all universities:

- 0: Setting the stage
- 1: Empathize
- 2: Define
- 3: Ideation
- 4: Prototype and test
- Conclusion & Next Steps

There can be seen differences in creating the Operations plans of the learning community at all universities. The main information is given in the table below.

Table 18. Operations plan of the learning community at all universities

Conceptual framework	Operational elements	Definition of the element co-created during the workshop
Shared vision	Objectives	**MRU:** To provide a supportive and collaborative environment for students undertaking their bachelor's thesis. **UWK:** To create opportunities for informal learning spaces. **HTW Berlin:** To build a robust and inclusive Learning Community, that promotes ILS initially, focusing on establishing a strong foundation within the university.

		AKD: To establish avenues for non-formal education. **Sapienza:** creating and promoting informal learning spaces within universities.
Communication between the actors of community	Modes of communication	**MRU:** Facebook group, monthly in-person meetings. **UWK:** MS Teams or emails, quarterly meetings. **HTW Berlin:** Miro Board, Discord channels, and direct surveys. **AKD:** meetings once a month, WhatsApp groups, Instagram page. **Sapienza:** Google Classroom.
Feedback mechanisms	Evaluation and feedback	**MRU:** Personalized progress journals. **UWK:** QR code. **HTW Berlin:** Via digital tools like question and answers on the Miro Board. **AKD:** A survey, QR codes on posters. **Sapienza:** through the Google Classroom platform and instant messaging.
Diversity of actors	Membership	**MRU:** Students can join the Facebook group upon invitation or request. **UWK:** Different hierarchical levels from all areas. **HTW Berlin:** Open to all HTW Berlin stakeholders including students, faculty, and staff, with efforts to involve also external partners. **AKD:** Graduate students, undergraduate students, faculty of education management, faculty of letters management, administrative staff, lecturers, disabled unit representative, and representative of the unit for international students must be members. **Sapienza:** Consist of members who represent the diversity of the university community in terms of background, experiences, opinions, and skills.
Inclusivity	Measures for inclusion	**MRU:** Students with different backgrounds, cultures, and experiences are involved in the learning community. **UWK:** By connecting the different hierarchical levels from all areas. **HTW Berlin:** Ensuring accessibility of (hybrid) meetings and digital platforms, facilitating diverse stakeholder engagement, and addressing specific needs of various community members. **AKD:** Through the integration of many levels of hierarchy across all domains. **Sapienza:** Physical accessibility, Technological accessibility, Inclusive communication formats, Multilingual communication
Trust based relationships	Moderation	**MRU:** Group rules will be established and pinned at the top of the Facebook page, ensuring respectful communication and relevance of content shared.

		UWK: Via MS Teams channel.
		HTW Berlin: Respect for all participants' opinions, confidentiality where required, and compliance to a collaborative, constructive dialogue approach.
		AKD: The community members will decide what information can be shared in the WhatsApp group, as well as other guidelines that must be followed.
		Sapienza: Mutual respect and appreciation of diverse opinions, Confidentiality and protection of sensitive data, Collaborative and constructive approach.
	Collaboration and peer support	**MRU:** Buddy System, Expert Sessions.
		HTW Berlin: Peer-to-peer learning and support structures within the community.
		AKD: Mainly lead by graduate and senior students.
		Sapienza: Will be provided by student representatives and some collaborators from the academic secretariat of the Faculty of Architecture.
Use of technologies	Digital tools	**MRU:** video conferencing tools, Facebook group.
		HTW Berlin: Miro Board and other collaborative tools.
		Sapienza: Google Classroom.
Access to space	Space for face-to-face meetings	**MRU:** A consistent, accessible location, preferably on campus or a quiet community space i.e., library.
		UWK: If face-to-face meetings are planned, they should take place in the first informal learning space organised.
		HTW Berlin: a flexible use of places on demand.
		AKD: The faculty administration assigned faculty lounge area and seminar room graduate room face to face meetings.
		Sapienza: an itinerant approach is proposed for selecting venues for meetings.
Support of the university	Staff support	**MRU:** University staff members (from library), Institute of communication.
		HTW Berlin: Participation in the LC is purely voluntary.

After analysis of each university operations plans, there can be stated, that each institution has a shared vision aimed at creating a conducive learning environment. This includes provisions for supportive spaces, opportunities for informal learning, and building a strong learning community within the university. Various modes of communication are utilized by different institutions to facilitate interaction among community members, including social media groups, digital platforms, and regular meetings. Institutions have implemented personalized progress tracking, feedback collection methods like QR codes, and digital tools for evaluating and improving the community's initiatives. Membership in the communities is diverse, encompassing students, faculty, staff, and even external partners. Efforts are made to ensure representation from various backgrounds and departments. Inclusivity measures focus on involving stakeholders from all levels, ensuring accessibility, diverse stakeholder

engagement, and accommodating the specific needs of community members. Community guidelines emphasize mutual respect, confidentiality, and constructive dialogue. Moderation practices aim to foster respectful communication and relevance of shared content. Peer support systems, expert sessions, and peer-to-peer learning structures are established to encourage collaboration and knowledge exchange within the community. Digital tools such as video conferencing, collaborative platforms, and learning management systems are leveraged to enhance communication and interaction within the community. Physical spaces for face-to-face meetings are provided, with preferences for accessible locations and informal learning spaces within or around the campus. Universities provide staff support, participation opportunities for staff members, and voluntary engagement in the learning community initiatives. Analysed plans highlight the collaborative efforts and strategies employed by different institutions to create a conducive and inclusive learning environment for their communities.

The learning communities at all universities are still forming its foundational elements, such as establishing effective communication channels, and developing trust among its members. As the community and its activities evolve, moving towards more structured and consistent engagement will be crucial for progressing to more advanced stages of emergent and maturity. There can be seen, that processes involving stakeholders engaged in the provision, management, design and use of ILS, e.g. with co-creative or participatory approaches (such as our learning communities), are an appropriate and effective way to identify needs and improve the quality, usability and inclusiveness of existing or newly created ILS. Concrete measures are developed and implemented by all universities to improve the communication and transfer of information on ILS to users and to create new or enhance existing learning environments.

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