Report Users' Perspective Analysis

Project Result 2 - Users' perspective analysis: usage, perception, and impact of informal learning spaces

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Introduction

MRU is the largest social sciences specialized university in Lithuania, whose most prominent studies and research areas are: Law, Public security and Public administration. The University conducts capable programmes in Educational Science, Economics, Humanities, Communication, Politics, Psychology, Sociology, and Management. Social science studies programmes dominate the MRU studies programme portfolio (95% of all studies portfolio – AIKOS database).

Four faculties operate at the University: (1) Law School; (2) Public Security Academy (Kaunas); (3) Faculty of Human and Social Studies; and (4) Faculty of Public Governance and Business. The university offers doctoral, Master's and Bachelor's Degree study programmes. The programmes operated by MRU are listed in the Table 2 below. Over 80% of them have international accreditation. The most popular study programmes are Law, Management, Public administration, Psychology, Social work, Public security and most recently Communication and Digital Marketing.

Currently MRU enrols 7500 students including 600 international students and employs over 400 academic staff. In addition, approx. 200 PhD students are enrolled in the studies at MRU in the fields of Law, Management, Psychology, Philology, Economics, and Educational science.

MRU has a modern and innovative infrastructure: recently built premises surrounded by green areas, the latest research and educational ICT equipment, one of the most modern academic libraries in Europe, open access to research resources, research and innovation management platforms, online studies facilities, etc. According to the latest data of Rotten WiFi the quality of WiFi places MRU in second place among universities in the world. Due to university infrastructure, managerial experience and broad cooperation networks international organizations tend to choose MRU for organization of their academic events. A virtual map illustrates the premises and infrastructure .

MRU has a modern library with an area of 3,338 m². The premises of the Central Library have 375 workplaces, 288 places for readers, including 87 computerized workplaces. The library's collection of printed publications consists of 228,000 copies (66,000 titles). About 2,000 new units are added every year. The library is located in the Central building and is open 6 days a week and at night from 8:00 p.m. until 10 o'clock The library has 9 reading rooms where students can work and use all library resources: computer workstations, electronic resources, scanners, printers and copiers. Most of the library's electronic resources can be accessed over the local network, MRU academic members have remote access to the library's subscribed resources using an EzProxy connection.

In 2015, the Mykolas Romeris University unit - Social Innovations Laboratory Network MRU LAB was opened. MRU LAB hosts interdisciplinary laboratories whose mission is to adapt the latest social, humanitarian, technological research and achievements to the needs of society and business. There are about 600 scientists and researchers employed at the laboratories.

The MRU LAB is equipped with public spaces with mobile workplaces, two auditoriums (80 and 30 seats) having all the necessary equipment for seminars, meetings and conferences.

Figure 1 below portrays an overview of the MRU campus:

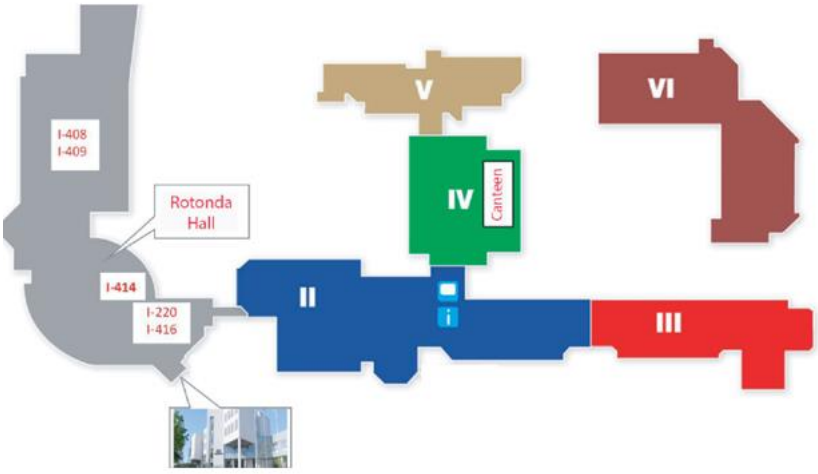


Figure 1. Map of MRU Campus

Methodology (student survey and focus groups)

The research approach combines quantitative (student survey) and qualitative (focus groups) methods. The investigated variables are in line with the project handbook. Table 1 below outlines the variables included in the survey and/or in the focus groups.

Survey (Quantitative method)	**Focus Groups (Qualitative method)**
a) **Availability, accessibility**, spatial characteristics, equipment and use of **informal** or nonconventional **learning spaces by different student groups** (self-developed scale for availability and accessibility)	
b) Analyzing and categorization of users' perceptions and experiences regarding the **fit of learning strategies and learning spaces** (differentiation into focused and collaborative learning)	• In-depth analysis of focused and collaborative learning environments
c) **Impact** of the used informal or non-conventional learning spaces on **students' well-being, knowledge acquisition and university belongingness**	
• **Satisfaction** with campus and knowledge acquisition (self-developed scale) • **Belongingness:** Affective commitment to the university (Allen and Meyer, 1990) • **Interpersonal relations** (French & Oakes, 2004) • **Well-Being:** WHO-5 Well-Being Index (Topp, Oestergaard, Soendergaard & Bech, 2015)	• In-depth analysis of satisfaction with the support and the learning environment
d) Existing **inequalities and barriers** related to informal or non-conventional learning spaces, including access to technical equipment and internet as well as to physical-spatial environments conducive to learning and well-being (self-developed items for barriers)	

	e) **Students' and lecturers' awareness and enabling strategies** to deal with existing inequalities and barriers • Future scenarios regarding hybrid learning and technological support

Table 1. Research approach overview and variables included in the survey and focus groups (self-created, 2022).

Further information regarding the implementation (procedure, instructions and questions) are documented in the survey and in the interview guide for the focus groups (see Appendix A).

The report is structured as follows:

(1) First, the descriptive results of the student survey are described.

(2) Secondly, hypotheses testing results as part of the student survey are presented.

(3) Thirdly, key findings of the students' and lecturers' focus groups are described.

Student survey: thematic structure of the survey

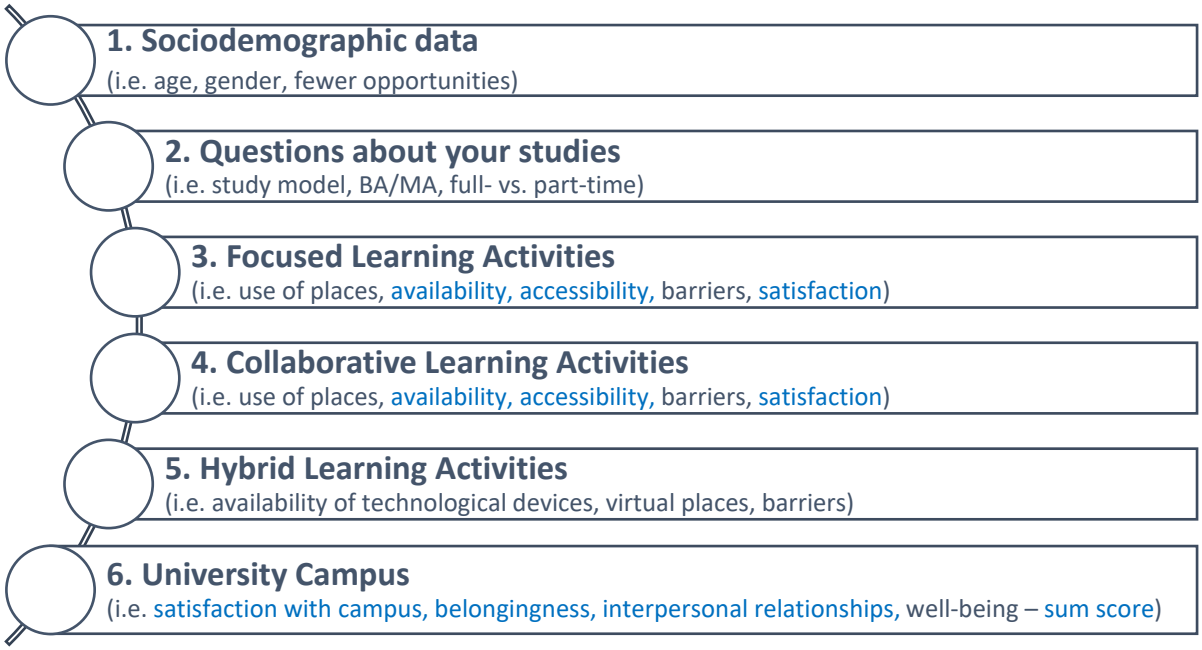


Figure 2. Thematic structure of the survey (blue marked variables are subjective variables which are summarized to a scale after an item and scale analysis) (self-created, 2023).

Descriptive analysis of the student survey

Firstly, data was transferred from the survey tool (Unipark) into a SPSS-file. We added all variable names and questions out of the survey as well as the answering categories for every item into the SPSS file. We checked for missing data and set up the correct scale levels. Coding for most items was aligned and coded in the same direction (e.g. fully agree = 5, fully disagree = 1).

For the central independent variables (availability, accessibility, satisfaction for focused and collaborative learning environments) and central dependent variables (satisfaction, belongingness, interpersonal relations and well-being) we conducted an item and scale analysis and created scales (see Appendix A).

In the **item analysis** every item was checked for the following criteria:

- **Mean** between **1,8 and 4,2** (to prevent floor and ceiling effects for five-point Likert scale, all scales except Well-being). Well-being is a **six-point Likert-scale** coded between 0 – 5, the **mean** has to be between **1 and 4** to prevent floor and ceiling effects.
- **Normal distribution**: checked by visual inspection
- **Corrected item-total-correlation**: between **0,30 and 0,80**

In the **scale analysis** the reliability was measured via **Cronbach´s alpha**. It should be **at least 0,70**.

Sociodemographic data

At MRU **n = 105** students participated in the survey. Sample size may vary slightly among questions, since not every question was mandatory and answered by every participant.

Regarding the gender, 70% of female students and 30% of male students participated.

Most of the students were between 21 – 25 years old (65%). About 31% were up to 20 years and only 2% between 26 – 30 years, 1% were 36-40 years.

Only about 5% stated that they are living in a household with minor children or persons in need of care, which fits to the young sample of participants who are predominantly in the beginning of their twenties.

The living situation is very diverse (see Figure 3). Most of the students stated to live at their parents´ or relatives´ house (32%). 21% stated to share a flat with others, 11% to live with a partner, 12% claimed to live in a student dormitory.

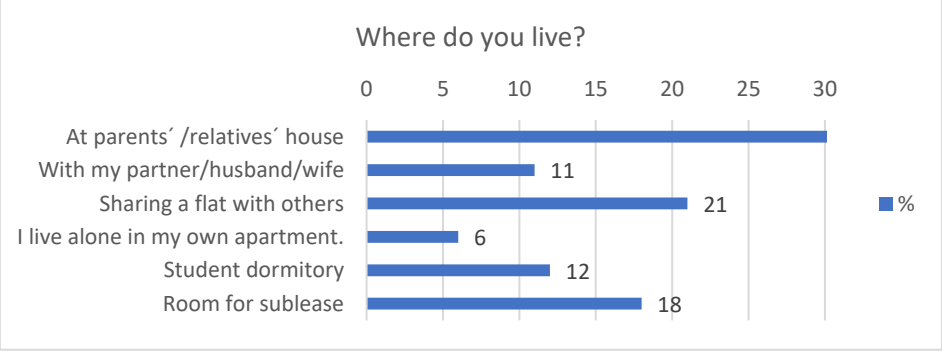


Figure 3: Living situation (n = 105).

Students stated a lot of personal challenges (see Figure 4). The most prominent one is the "need to work for living while studying" (41%). In addition, an alarmingly amount of 14%

report to suffer from “mental diseases” and having economic obstacles. Every other challenge is experienced between 1% to 7% of the participants. Only 36% percent report to experience “none of these” challenges.

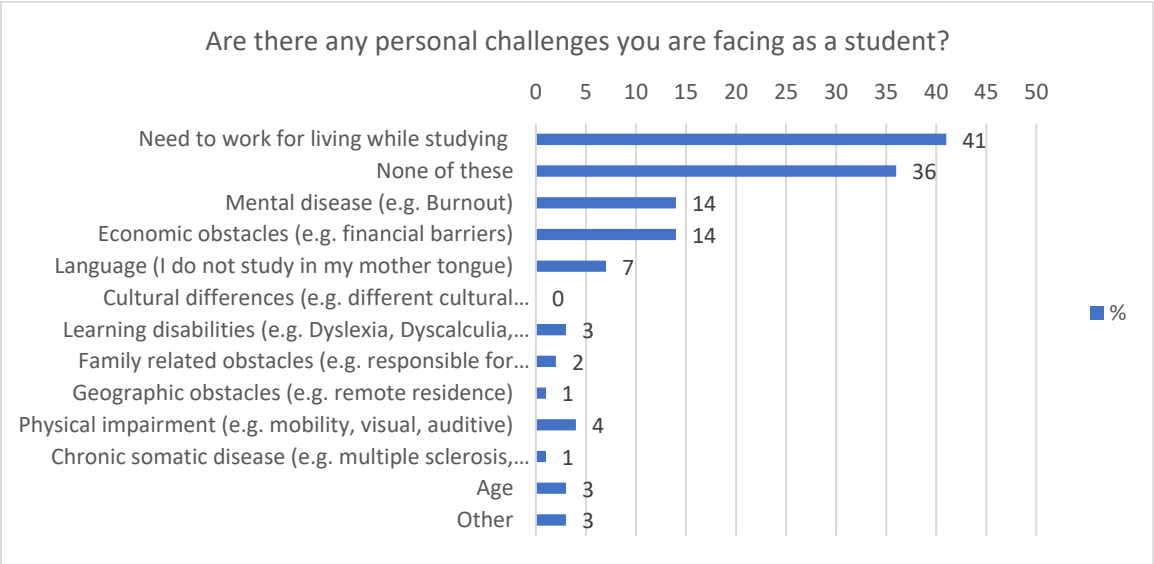


Figure 4: Personal challenges (students with fewer opportunities) (n = 105).

Questions about studies

Regarding the “distance to university” most students commute between 5 – 10 km (45%), followed by 0 – 4 km (30%) to their campus. Only 18% live far (11 – 30 km). About 3% live more than 30 km away.

Most of participants are aiming at a Bachelor´s degree (95%), 5% is aiming at a Master´s degree. Most of the students study full-time (95%) and most of them study in presence on campus (73%).

According to the full-time study model, most students state to spend about 11-15 hours per week on their studies (34%). Around 31% report 6-10 hours per week, 12% spend 16-20 hours per week, about 10% report up to 5 hours or 21-30 hours per week.

Students were enrolled mostly in 2021 (45%), 2020 (43%) or 2019 (11%).

There are one prominent field of study in this sample (see Figure 6). Students at MRU mostly study “Social sciences, Journalism and Information” (95%).

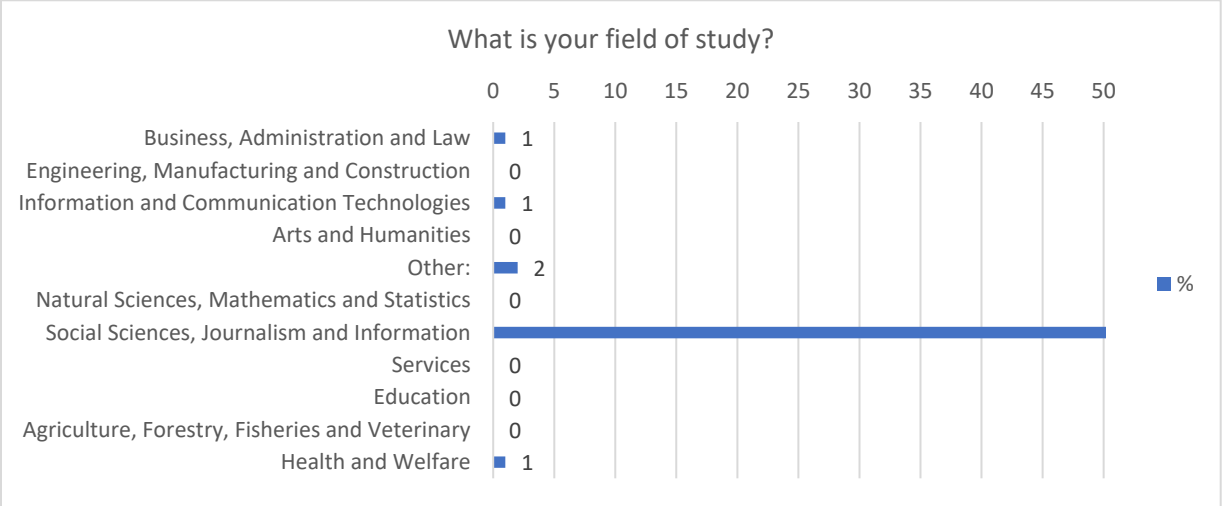


Figure 5: Field of study (n = 105)

Focused learning activities

Students were asked at which places they conduct focused learning activities (see Figure 6). The most prominent place to conduct focused learning is "The place where I live" (mean = 4,4), according to students. Every other place is less mentioned, e.g. the "University library" (mean = 3,3), "Interim spaces on campus" (mean = 2,8) or the "Outdoor places" or "student lounges" (mean = 2,6).

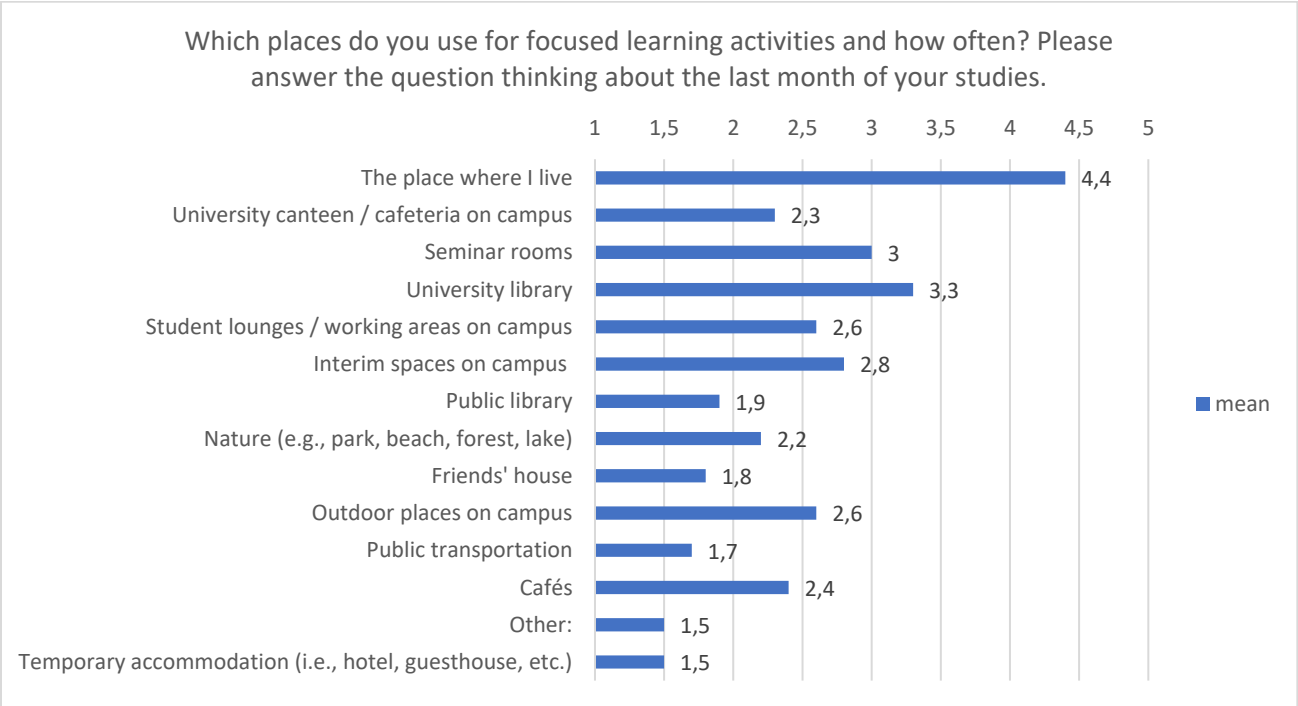


Figure 6: Places used for focused learning activities (n = 105)

The item and scale analyses were conducted, whereof the results are presented in Table 2. Students were asked to rate the availability and accessibility of focused learning spaces (see Figure 9). There is no difference between accessibility and availability in terms of spaces used

to conduct focused learning activities - availability is slightly better rated (mean = 4,24) than accessibility (mean = 4,19).

Name of Scale	Number of Items	Mean	Distribution	item-total-correlation	Reliability of scale (Cronbach's Alpha)
FL_Availability	3	Ok, except FL_AV_1 and FL_AV_2 mean > 4,2	ok	Ok, except FL_AV_1 0,82, alpha without FL_AV_2 0,84 and FL_AV_2 0,84, alpha without FL_AV_2 0,84	0,90
FL_Accessibility	4	Ok, except FL_AC_1 and FL_AC_2 and FL_AC_1 and FL_AC_3 mean > 4,2	ok	Ok, except FL_AC_3 0,81, alpha without FL_AC_3 0,83	0,89
FL_Satisfaction	2	ok	ok	Not ok: FL_S_1 0,87,and FL_S_2 0,87	0,93

Table 2. Item and scale analysis for focused learning activities.

Name of Scale	Mean	SD
FL_Availability	4,24	0,67
FL_Accessibility	4,19	0,66
FL_Satisfaction	4,11	0,80

Table 3. Descriptive statistics of focused learning activities.

Students report a lot of obstacles regarding focused learning activities. Most of all, 76% state "opening hours" as an obstacle. About 30% perceive the "limited availability (e.g. too crowded)" as a barrier to use focused learning spaces. Obstacles concerning registration (5%), difficulties in accessing (3%) or others (5%) are less mentioned (see Figure 7).

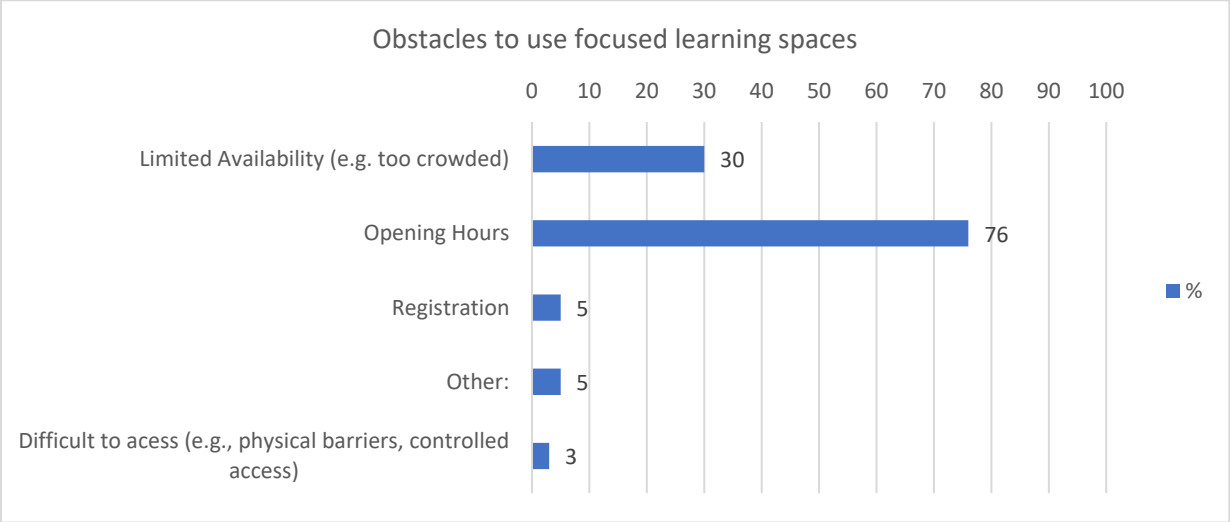


Figure 7. Obstacles to use focused learning activities.

Collaborative learning activities

Students were asked which places they use to conduct collaborative learning activities (see Figure 8). Compared to focused learning activities there is not a single, most prominent place for collaborative learning activities. Students report different places, such as "university library" (mean = 3,4), "the place where I live" (mean = 3,2), "interim spaces on campus" (mean = 3), which are the same places mentioned as for focused learning activities.

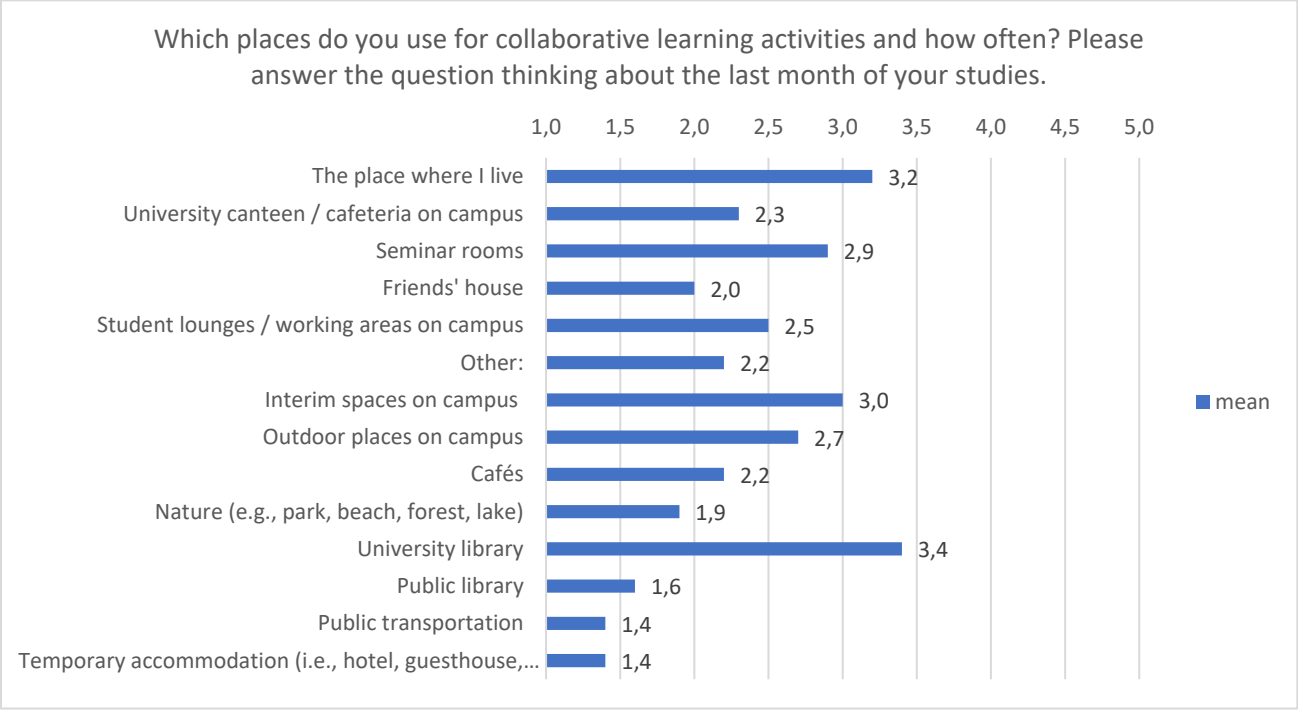


Figure 8: Places used for collaborative learning activities (n = 105)

The item and scale analyses were conducted, whereof results are presented in Table 4. There are two items which show not appropriate item-total correlations, indicating that items do not vary regarding their content as much as wanted. Students were asked to rate the

availability and accessibility of collaborative learning spaces (see Table 5). There is no difference between accessibility and availability in terms of spaces used to conduct collaborative learning activities.

Name of Scale	Number of Items	Mean	Distribution	item-total-correlation	Reliability of scale (Cronbach's Alpha)
CL_Availability	3	Ok, except CL_AV_1 and CL_AV_2 mean > 4,2	Not ok	Ok, except CL_AV_1 0,81, alpha without FL_AV_1 0,84 and CL_AV_2 0,81, alpha without CL_AV_1 0,85 and	0,90
CL_Accessibility	4	Ok, except CL_AC_1 and CL_AC_2 mean > 4,2	Not ok	Not ok, CL_AC_1 0,86, alpha without item 0,94; CL_AC_2 0,91, alpha without item 0,93; CL_AC_3 0,90, alpha without item 0,93; CL_AC_4 0,87, alpha without item 0,94	0,95
CL_Satisfaction	2	Ok, except CL_Satisfaction_1 mean > 4,2	ok	Not ok, CL_Satisfaction_1 0,82,and CL_Satisfaction_2 0,82	0,83

Table 4. Item and scale analysis of collaborative learning activities.

Name of Scale	Mean	SD
CL_Availability	4,26	0,74
CL_Accessibility	4,12	0,83
CL_Satisfaction	4.23	0,79

Table 5. Descriptive statistics of collaborative learning activities.

Accordingly, students report a great deal of obstacles regarding collaborative learning activities (see Figure 9). Most of all, 69% state "opening Hours" as an obstacle. About 29% perceive the "limited availability (e.g. too crowded)" as a barrier to use collaborative learning spaces. Registration (21%), difficulties in accessing (2%) or others (5%) are less mentioned. These percentages are very similar to the obstacles reported for spaces to conduct focused learning activities.

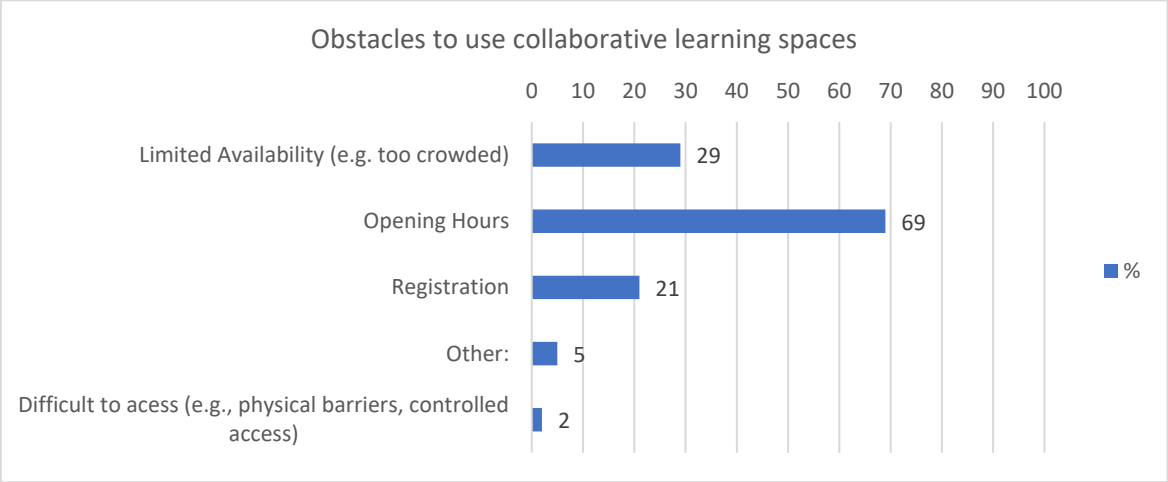


Figure 9. Obstacles to use collaborative learning activities

Hybrid learning activities

Students were asked about the devices they have available for their studies. About 99% state that they have a smartphone, 98% have a laptop/notebook/netbook and 23% have a tablet. E-book reader or other devices were not mentioned.

About 68% state that they have access to WIFI on campus, 24% mentioned partly (not everywhere/not anytime) and most of them are satisfied with the WIFI quality (53% agree).

When it comes to using virtual spaces for studying, most students use “learning management systems, i.e. Moodle” (mean = 4,1), “messenger services, i.e. WhatsApp” (mean = 4,1), “social media” (mean = 4,1), “video communication, i.e. Zoom” (mean = 3,4) or “online document management platforms, i.e. Google Docs” (mean = 3,2). Online forums, online chats and augmented/virtual reality are less mentioned.

The top three of technological obstacles are with 18% the “inconvenience”, 17% “lack of infrastructure” and the “lack of knowledge” (14%) to use the provided technologies appropriately.

Dependent variables (satisfaction, belongingness, interpersonal relations, well-being)

The item and scale analyses were conducted, whereof results are presented in Figure 15. For most scales, analysis results were satisfying. Only a few items had to be excluded.

Mean and standard deviations of scales are presented in Table 6.

Name of Scale	Number of Items	Mean	Distribution	item-total-correlation	Reliability of scale (Cronbach’s Alpha)
Satisfaction	6	ok	ok	Ok, except S_U_C_1 0,83, alpha without item 0,90 and except S_U_C_2 0,81, alpha without item 0,90 and except S_U_C_3 0,81, alpha without	0,92

				item 0,90 and except S_U_C_4 0,82, alpha without item 0,90	
Belongingness	6	ok	ok	Ok, except B_U_2 0,26, alpha without B_U_2 0,79	0,77 (6 item scale) 0,79 (5 item scale)
Interpersonal relationships	6	ok	ok	ok	0,89
Well-Being	5	ok	ok	Ok, except W_3 0,82, accepted	0,92

Table 6. Item and scale analysis of central dependent variables.

Name of Scale	Mean	SD
Satisfaction	3,96	0,75
Belongingness	3,23	0,82
Interpersonal Relationships	3,96	0,75
Well-Being	60,19	20,53

Table 7. Descriptive statistics of central dependent variables.

Conclusion descriptive results

Our sample at MRU is representative to the student population concerning gender, age and field of study. Most of the surveyed students study full-time and aim at a Bachelor´s degree. They are in their first or second year of studies. Students at MRU mostly study “Social sciences, Journalism and Information” (95%).

We were surprised that most of the students stated to live at their parents´ or relatives´ house (32%).

Students stated a lot of personal challenges facing while studying. The most prominent one is the “need to work for living while studying” (41%). In addition, an alarmingly amount of 14% report to suffer from “mental diseases” and having economic obstacles.

Most students at MRU conduct focused learning in “The place where I live”. They report a lot of obstacles regarding focused learning activities. Most of all, 76% state “opening hours” as an obstacle for focused learning.

For collaborative learning, students report different places, such as “university library”, “the place where I live”, “interim spaces on campus”. Accordingly, students report a great deal of obstacles regarding collaborative learning activities. Most of all, 69% state “opening Hours” as an obstacle. These percentages are very similar to the obstacles reported for spaces to conduct focused learning activities.

Hypotheses testing

The hypotheses testing describes the impact of the used informal or non-conventional learning spaces on students' belongingness, interpersonal relationships, well-being and university campus satisfaction.

Hypotheses 1a, 1b, 1c and 1d

Hypothesis 1a: The higher the availability and accessibility of informal learning spaces on campus, the higher the university belongingness.

Hypothesis 1b: The higher the availability and accessibility of informal learning spaces on campus, the higher the interpersonal relationships.

Hypothesis 1c: The higher the availability and accessibility of informal learning spaces on campus, the higher the well-being of students.

Hypothesis 1d: The higher the availability and accessibility of informal learning spaces on campus, the higher the university campus satisfaction.

	Belongingness	Interpersonal Relationships	Well-Being	University Campus Satisfaction
Availability	r = 0,42 p < 0,001	r = 0,53 p < 0,001	r = 0,29 p < 0,001	r = 0,70 p < 0,001
Accessibility	r = 0,54 p < 0,001	r = 0,55 p < 0,001	r = 0,38 p < 0,001	r = 0,71 p < 0,001

Table 8. Results of hypotheses 1a, 1b and 1c.

All requirements are fulfilled.

Hypotheses 1a, 1b, 1c and 1d are supported.

The results indicate that there is a relationship between the availability and the accessibility of informal learning spaces on campus and positive consequences, i.e. university belongingness, interpersonal relationships, well-being and university campus satisfaction.

The results suggest that the university should invest in their informal learning spaces, thereby enhancing positive outcomes. Additionally, further aspects such as a higher belongingness will lead to a lower intention to quit studies and to recommend the university. Further, positive interpersonal relationships will enhance the inclusion of students, and in turn, lead to a better knowledge acquisition.

Nevertheless, results do not imply causal relationships. It might also be true that positive interpersonal relationships lead to a higher usage of informal learning spaces, and thereby, increasing the perception of the availability and accessibility. Additionally, students with a higher well-being might be able to use the university infrastructure more and perceive their university in a more positive way than students with a lower well-being.

To conclude, these findings suggested that when students perceive informal learning spaces as available and accessible, they tend to have a greater sense of belongingness, better interpersonal relationships, higher well-being, and greater campus satisfaction. Universities should invest in improving those spaces and services to promote students' academic and personal progress and overall well-being.

To summarize, improving informal learning spaces on campus is a measure which is significantly related to positive effects. Thereby, availability and accessibility of informal learning spaces on campus should be fostered.

Hypothesis 2

Hypothesis 2: The availability, accessibility and satisfaction with informal focused learning spaces is higher than of informal collaborative learning spaces.

	Mean	SD	n	T-Test	Effect size Cohen´s d
Availability_FL	4,27	0,67	104	t (103) = 0,30, n.s.	0,03
Availability_CL	4,26	0,74	104		
Accessibility_FL	4,20	0,66	101	t (100) = 0,12, n.s.	0,02
Accessibility_CL	4,12	0,81	101		
Satisfaction_FL	4,11	0,80	100	t (99) = 2,90, p < 0,05	0,29
Satisfaction_CL	4,24	0,69	100		

Table 9. Results of hypothesis 2.

All requirements are fulfilled.

In Hypothesis 2 we wanted to see if there are any differences regarding availability, accessibility and satisfaction between informal focused learning spaces and informal collaborative learning spaces. Universities traditionally focus on cognitive and functional competencies, which are related to individual, focused learning spaces (e.g. reading, writing). Therefore, we assumed that there is a higher availability, accessibility and satisfaction for focused learning spaces.

Results show that this is partly true. There were no differences concerning availability and satisfaction between the two types of informal learning spaces. This result implies that universities should invest in informal collaborative learning spaces.

Hypotheses 3a, 3b, 3c and 3d

Hypothesis 3a, 3b and 3c: Informal collaborative learning spaces are more relevant to enhance university belongingness, interpersonal relationships, well-being and university campus satisfaction than informal focused learning spaces. (There is a stronger relationship between informal collaborative learning spaces and university belongingness, interpersonal relationships, well-being and university campus satisfaction than between informal focused learning spaces and university belongingness, interpersonal relationships, well-being and university campus satisfaction.)

	Belongingness	Interpersonal Relationships	Well-Being	University Campus Satisfaction
Availability_FL	r = 0,44, p < 0,001,	r = 0,52, p < 0,001	r = 0,23, p (0,021) > 0,001	r = 0,62, p < 0,001
Availability_CL	r = 0,35, p < 0,001,	r = 0,45, p < 0,001	r = 0,30, p < 0,001	r = 0,67, p < 0,001
Accessibility_FL	r = 0,47, p < 0,001	r = 0,53, p < 0,001	r = 0,32, p < 0,001	r = 0,66, p < 0,001
Accessibility_CL	r = 0,51, p < 0,001	r = 0,49, p < 0,001	r = 0,38, p < 0,001	r = 0,68, p < 0,001

Table 10. Results of hypotheses 3a, 3b and 3c.

All requirements are fulfilled.

We tested these hypotheses by comparing the correlation coefficients Av_FL vs. Av_CL and Acc_FL vs. Acc_CL. Hypotheses 3a to 3d are not supported. The relationships are almost equal between FL und CL. These results imply that students rate the importance of informal focused and collaborative learning spaces similar. Probably, it is not only the learning activity itself but also the interaction with other students while meeting at the university.

Another reason for the results could be that students do not differ between availability and accessibility of focused and collaborative learning spaces as much as we expected. Indeed, almost all learning spaces can be used for both learning activities.

This aspect leads us to the assumption that informal learning spaces should not be designed explicitly for one or the other learning activity. Informal learning spaces should allow a flexible and multifunctional usage. Students need transparency where to learn and where to find which informal learning spaces, but they are very flexible in using the spaces.

Discussion hypotheses testing

Hypotheses 1a to 1d are supported, indicating positive outcomes when improving availability and accessibility of informal learning spaces.

Hypotheses 2 is partly supported. The accessibility of informal collaborative learning spaces should be improved.

Hypotheses 3a to 3d are not supported. It can be assumed that informal learning spaces should allow a flexible usage thereby increasing the amount of time students spent with learning activities on campus.

Conclusion quantitative data analysis

Results clearly show that informal learning spaces are a relevant factor for increasing belongingness, interpersonal relationships, well-being and university campus satisfaction. The strong relationships between the availability and accessibility of informal learning spaces, not only with related variables (e.g. belongingness to campus, satisfaction with campus), but even with overarching variables (e.g. interpersonal relationships, well-being) are convincing. It can be assumed that improving the quality on campus will support integrating students more and support increasing interactions between students which in turn will lead to a higher satisfaction and well-being. These complex relationships should be analyzed in further studies.

Focus groups/interviews: deductive themes

*This chapter is **based on the results of the focus groups and interviews with students and lecturers.***

Figure 18 displays the frame of the focus group interview guide, and simultaneously, the **four deductive themes** for both focus groups (students and lecturers):

1. Impact of the used informal or non-conventional learning spaces on students' knowledge acquisition and satisfaction with support and the learning environment.
2. Existing inequalities and barriers related to informal or non-conventional learning spaces, including access to tangible and intangible technical equipment (i.e., sockets, WIFI) as well as to physical-spatial environments conducive to learning and well-being.
3. Students' and lecturers' awareness and enabling strategies to deal with existing inequalities and barriers.
4. Hybrid and virtual learning activities.

Figure 10: Deductive themes of the focus group interviews (for students and lecturers)

An English version of the interview guide was developed by HTW Berlin as the lead partner of PR2. The interview guide was revised two times following the suggestions and comments of the project partners in a participatory process. Final guidelines, including interview questions and some instructions concerning the interview process, were translated into the respective languages (see Appendix).

It was aimed to conduct at least one focus group interview with students (5-7 students, incl. 3 with SWFO) and at least one with lecturers (5-7 lecturers) from each university in each country. Data was transcribed, coded and analysed according to guidelines developed by HTW Berlin in cooperation with the partners (see Appendix).

Student focus groups/interviews

Implementation

The focus group with students was conducted with five students enrolled either as full time of Communication and digital marketing second course study program, on the 27th of June 2022 2:00-3:30 PM online via Zoom. The students interviewed predominantly studied within the Faculty of Communication and pursued primarily a bachelor's degree as shown in Table below.

Students	Campus	Faculty	Degree
Student 1 (S1)	MRU campus	Institute of Communication	Bachelor
Student 2 (S2)	MRU campus	Institute of Communication	Bachelor

Student 3 (S3)	MRU campus	Institute of Communication	Bachelor
Student 4 (S4)	MRU campus	Institute of Communication	Bachelor
Student 5 (S5)	MRU campus	Institute of Communication	Bachelor

Table 11. Overview of the focus group participants - students

Results

1. Impact of the used informal or non-conventional learning spaces on students' knowledge acquisition and satisfaction with support and the learning environment

Figure 12 and 13 below show an overview of students' knowledge and usage of informal learning spaces (ILS) on MRU. The identified spaces include both, favourite and most frequently used ILS on campuses. The areas marked with **green dots** on the map indicate spaces used **for both focused and collaborative informal learning activities**, while **orange dots** represent spaces used **for focused informal learning activities**. The **blue dots**, on the other hand, represent spaces used for collaborative informal learning activities.

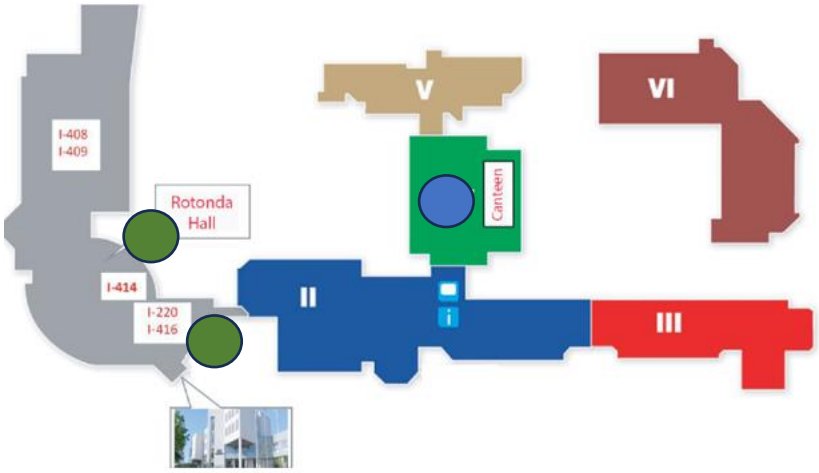


Figure 11: MRU map

Figure 12: MRU map

The frequency of students using these spaces is generally stated to be around 3-4 times per week. However, they have mentioned that the frequency of use increases during exam periods and when preparing group assignments.

Label	Notes/description	Indoor	Outdoor	Off-campus	Focused learning	Collaborative learning	Reference
Library	*The biggest space for informal learning at MRU*	x			x	x	S1, S2, S3, S4, S5
Study rooms & halls at dormitories	*Available for all, who lives at dormitories, always working*	x			x	x	S3
Lecture halls that are free/empty/ available	*Students needs to be let in to lecture halls, when they are free*	x				x	S1,S2,S4
MRU LAB building	*Special building near university, has restricted entering*	x			x		S3, S4, S5
Corridor spaces in the faculty buildings that are designed for studying	*Many corridor spaces with comfortable furniture*	x			x	x	S1, S2, S3, S4, S5
Canteens	*There are 3 main canteens at MRU*	x				x	S1, S3
Rothond Hall	*The main hall with comfortable furniture*	x				x	S4, S5
Inside Yard	*Available when weather is good*		x			x	S2, S3, S4
Green areas (Campus area as a whole)	*Not too many selections of comfortable places in campus despite inside yard*		x		x	x	S3,S4, S5
Libraries at town	*A lot of selection, far from university*			x	x		S1, S5

Book cafes nearby	*There can be found a few nearby*		x	x		x	S2, S3, S4

Table 12. Important informal learning spaces at MRU as identified by students

2. Existing inequalities and barriers related to informal or non-conventional learning spaces, including access to technical equipment, internet and physical-spatial environments conducive to learning and well-being.

The satisfaction levels of the students during the interviews indicate that there is a high level of satisfaction with the library space, they mentioned variety of study areas on the campus. But also, all students interviewed stated that it was more convenient to study at home, because it is easier and more convenient. They mentioned, that during the pandemic they got used to study at home, communicate by virtual environment. The following sections discuss student opinions regarding the availability and accessibility of informal learning spaces on campus.

2.1. Availability of informal learning spaces

Most students expressed satisfaction in finding suitable study areas when needed. One student (S3) mentioned, that library could me more available for group work. Considering the availability of informal learning spaces, students have mentioned a wide range of different areas – Library, Study rooms & halls at dormitories, Lecture halls, MRU LAB building, Corridor spaces in the faculty buildings that are designed for studying, Canteens, Rothond Hall, Inside Yard. All of the students mentioned, that it is easy to find available place any time.

2.1.1. Technological infrastructure (availability of plugs, WIFI, etc.).

Students did not have any complaints about the WIFI. Negative comments were made regarding the availability of power plugs in some areas - Lecture halls, MRU LAB building, Corridor spaces in the faculty buildings that are designed for studying, Canteens, Rothond Hall (S2, S5). The barriers identified by students mostly related to technological infrastructure, such as plugs, computers (sometimes they are slow at the library).

2.1.2. Environmental factors (i.e., occupancy, noise-level, etc.)

Some complaint among students were focused on the temperature in the library (in winter it can be cold, in summer quite hot (S2,S4). Also, some study rooms lacked heating, resulting in uncomfortably cold conditions. Noise level in the library was mentioned as students should be quiet there and they don't always want to go to the group rooms (S1,S4). For the outdoor spaces, rainy weather, snow was mentioned as barriers (S5).

2.1.3. Ambience (conditions promoting well-being)

Students did not mentioned any negative aspects impacting their overall feeling of well-being when using informal learning spaces.

2.2. Access to informal learning spaces

2.2.1. Restricted opening hours

The restricted hours of the locations did not have an impact of accessibility on the usage of the spaces. Students do not require access to these spaces beyond the provided hours – they know when the university is open and trying to use those hours for informal learning.

2.2.2. Controlled access

For the controlled access, some students mentioned, that informal learning spaces are locked at certain times (locked seminar rooms after classes) (S1,S3,S4,S5). Some places are not accessible, making it difficult to reach informal learning spaces (MRU LAB building) (S2,S3).

2.2.3. Students with fewer opportunities

Most of the respondents defined themselves as students with fewer opportunities, because they need to work to pay for studies (S1, S4, S5). Also, ERASMUS students, international students face language barriers when accessing informal learning spaces – it is hard to understand the instructions, guidelines, or resources.

3. Students' perception on awareness and enabling strategies to deal with existing inequalities and barriers

3.1. Lecturers and/or university administrations' awareness and plans to reduce barriers

Most students did not define any important barriers when it came to accessing informal learning spaces. Students mentioned, that lecturers are supportive when students are informing about problem related to job – they are allowing to submit tasks later, submitting more detailed information on Moodle and students can prepare later (S2, S4).

Students have expressed that they are not going to administrators telling about existing inequalities and barriers, because those barriers are really limited (S1, S5). Also, they think, that the administration and faculty members are quite closely engaged with the students and if they would be aware of the problem, they would solve it (S1, S3).

3.2. Students' ideas and potential plans to break these barriers.

The students did not suggest any solutions to overcome these barriers, because they are minimal according to them. Students mentioned a high level of satisfaction with the informal learning spaces, they mentioned variety of study areas on the campus, all of them are available and accessible.

4. Hybrid and virtual learning activities

4.1. Knowledge/support to find informal learning spaces on campus

Students stated that there is no official source or application providing information about ILS at the university campus. But the university is small, so it is easy to ask at the registration desk for the information. At the beginning of September students have introduction week, so the organizers are showing everything. Also, lecturers are very helpful.

4.2. Enhancing interactions within the physical space

Students are not worried about occupancy rate of study spaces on campus, because there are always an empty places (S1, S2, S3, S4, S5). But some students have mentioned that having a map on campus showing the locations of ILS and providing information about their operating hours would be beneficial. This would assist them in easily locating these spaces and accessing them at the appropriate times for their study needs at the beginning of the studies, this would be important for a first course and international students (S4, S5).

4.2.1. *Overcoming barriers in collaborative hybrid groupwork by integrating services into the virtual space*

All students were positive about hybrid groupwork by integrating services into the virtual space. All of them are using hybrid groupwork, especially after the pandemic, when most of them were at the home towns and working remotely on tasks. The implementation of hybrid and virtual learning activities is very important for working students, granting them equal opportunities to engage in lessons (S3, S4, S5). Most of the students have participated in hybrid presentations, preparation for then and did not have any difficulties (S1, S3). Most of the students mentioned Messenger, Discord groups for communication, online meets, Google disc for working on documents (S2, S3, S5). The students have mentioned that online platforms, such as Zoom and Teams for group work (S1, S2, S3).

Lecturer focus groups/interviews

Implementation

The focus group meetings with lecturers were conducted face-to-face on 16th of June, 2022, from 10:00 a.m. to 12 p.m., in the Institute of Communication Meeting Room. The group consisted of 5 lecturers representing Institute of Communication of MRU. All participants were professors. Table 15 provides a summary of the information on the lecturer focus group.

Lecturers	Campus	Faculty	Position
Lecturer 1 (L1)	MRU campus	Institute of Communication	Associate professor
Lecturer 2 (L2)	MRU campus	Institute of Communication	Associate professor
Lecturer 3 (L3)	MRU campus	Institute of Communication	Associate professor, Head of the Institute of Communication

Lecturer 4 (L4)	MRU campus	Institute of Communication	Associate professor
Lecturer 5 (L5)	MRU campus	Institute of Communication	Associate professor

Table 13. Overview of focus group participants - lecturers

Results

In the following, the results and key insights gathered from the focus group with lecturers are presented according to the four interview themes' order, which is the same structure like the one of the previously analysed student focus group.

1. **Impact of the used informal or non-conventional learning spaces on lecturers' knowledge acquisition**

Figure 16 below show an overview of lecturers' knowledge about usage of informal learning spaces (ILS) on MRU. The identified spaces include both, favourite and most frequently used ILS on campuses. The areas marked with **green dots** on the map indicate spaces used **for both focused and collaborative informal learning activities**, while **orange dots** represent spaces used **for focused informal learning activities**. The **blue dots**, on the other hand, represent spaces used for collaborative informal learning activities.

Figure 13: MRU map

Accordingly, the lecturers participated in the focus group have listed the informal learning spaces frequently used by students across the campus, starting with their own faculties. These spaces, as observed by the lecturers, are presented in Table 14.

Label	Notes/description	Indoor	Outdoor	Off-campus	Focused learning	Collaborative learning	Reference

Library	*The biggest space for informal learning at MRU*	x			x	x	L1, L2, L3, L4, L5
Study rooms & halls at dormitories	*Available for all, who lives at dormitories, always working*	x			x		L1, L3
Lecture halls that are free/empty/ available	*Students needs to be let in to lecture halls, when they are free*	x			x	x	L1, L2, L4, L5
MRU LAB building	*Special building near university, has restricted entering*	x			x	x	L1, L3, L5
Corridor spaces in the faculty buildings that are designed for studying	*Many corridor spaces with comfortable furniture*	x			x	x	L1, L2, L3, L4, L5
Canteens	*There are 3 main canteens at MRU*	x				x	L2, L3
Rothond Hall	*The main hall with comfortable furniture*	x				x	L1, L3, L5
Inside Yard	*Available when weather is good*		x		x	x	L2, L3, L4
Green areas (Campus area as a whole)	*Not too many selections of comfortable places in campus despite inside yard*		x		x	x	L3, L5
Libraries at town	*A lot of selection, far from university*			x	x		L3
Book cafes nearby	*There can be found a few nearby*		x	x		x	L2, L5

Table 14. Important informal learning spaces at MRU as identified by students

Satisfaction with the used learning location

Strengths:

In terms of learning spaces at MRU, the following strengths are cited by lectures:

- Always students can select from many places, university has plenty of them (L1, L3, L5)
- Inside Yard, Green areas (Campus area as a whole) is a great learning space in early autumn and spring, students are enjoying them (L2, L3)

Weaknesses:

The following weaknesses are cited by lectures:

- Corridor spaces in the faculty buildings that are designed for studying are a little shady, it is necessary to have enough light (L4)
- There is a lack of creative learning spaces, university has many options for informal learning spaces, but all of them lack of creativity (L1, L3).
- There should be more furniture, which can transform (L4).

2. **Existing inequalities and barriers related to informal or non-conventional learning spaces, including access to technical equipment, internet and physical-spatial environments conducive to learning and well-being**

None of the lecturers have mentioned important barriers regarding the availability of informal learning spaces. There are no inequalities concerning the availability of spaces among faculties, because the university is not big and based on one campus, which is available for everyone. Barriers on infrastructure and ambience can be caused by being badly soundproofed, by bad lightning or ventilation, lacking of more creative space (L2, L3, L4). Accordingly, barriers to access ILS on campuses were discussed with lecturers, but they are not concerned about restricted physical access. Additionally, the restricted opening hours of the canteen and library were not viewed as problematic.

The following barriers regarding the accessibility of informal learning spaces are mentioned by lectures:

- In the cold period or bad weather it is not possible to use Inside Yard, Green areas (Campus area as a whole), which is a great learning space in early autumn and spring, students are enjoying them (L2,L4).
- There are too few meeting areas on campus where students can feel comfortable and have a coffee or beverages (L1, L3).
- Seminar rooms are usually locked, so students are not giving the priority of using them, even though it is possible to get a key card (L2, L5).
- Lecturers mentioned that students need to register in advance before using the library for group work rooms, that is not always convenient for them (L1, L2, L3).

3. **Lecturers' awareness and enabling strategies to deal with existing inequalities and barriers**

Lecturers and/or university administrations' awareness and plans to reduce barriers

All lecturers commented that there are no important existing inequalities and barriers. Just a geographical barrier was mentioned since many students have left Vilnius and come to the home town during Covid. But that can be easily solved by hybrid interactions. Hybrid communication can help students for various reasons (e.g., costs, transportation times, etc). Since lecturers cannot define important barriers, they claimed, that they are not receiving any information concerning the informal learning space concept at MRU.

Lecturers mentioned that students' identification with the campus seems to be low, while the campus doesn't have a spirit, there can be seen a lack of creative spaces (L2,L4). Lecturers believe it is essential to make ILS more creative, where students can "feel the spirit" without lecturer supervision, more focused on collaboration (L2, L3).

Lecturers' potential plans to break these barriers

Lecturers did not appear to have the intention to break these barriers, because those barriers are small and not having an important influence.

4. Hybrid and virtual learning activities

Opinions on overcoming barriers by integrating services in the virtual space (apps, etc.)

All lecturers stated that hybrid and remote learning activities have a lot of advantages. Faster and more convenient communication was mentioned by all as the main advantage, students can sustain learning activities regardless of time and location. The most common online tools used by students for group exercises and other exchanges, according to lecturers, are: Facebook, Instagram, Messenger, Discord. Lecturers by themselves usually use Zoom, Teams for the consultations or other collaboration (L2,L4, L5).

Hybrid learning activities include communicating students and providing feedback, sharing information and teaching. (L1, L3, L4, L5). All of the lecturers were familiar with the situation, when students carrying out projects in the class and with the students from different locations.

One considered disadvantage mentioned by some lecturers were lack of social interaction (L2, L5).

Opinions on how an online platform could enhance interactions within a physical space

Online platforms have the potential to enhance interactions within a physical space. Students' can get more knowledge of various areas where they could study or engage with fellow students by using that kind of platform. The availability of these spaces should be marked also, but that could be hard to implement.

Conclusion qualitative data analysis

Most of the time students use Library, Study rooms & halls at dormitories, MRU LAB building, Corridor spaces in the faculty buildings that are designed for studying, Green areas (Campus area as a whole) for the focused learning activities. Library, Study rooms & halls at dormitories, Lecture halls that are free/empty/ available, Corridor spaces in the faculty buildings that are designed for studying, Canteens, Rothond Hall, Inside Yard, Green areas (Campus area as a whole), Book cafes nearby were mentioned as appropriate places for a collaborative learning. The satisfaction levels of the students during the interviews indicate that there is a high level of satisfaction with the library space, they mentioned variety of study areas on the campus. Most students expressed satisfaction in finding suitable study areas when needed. The barriers identified by students mostly related to technological infrastructure, such as plugs, computers (sometimes they are slow at the library). Students did not mention any negative aspects impacting their overall feeling of well-being when using informal learning spaces. Most students did not define any important barriers when it came to accessing informal learning spaces. Students are not worried about occupancy rate of study spaces on campus, because there are always an empty places. All students were positive about hybrid groupwork by integrating services into the virtual space. All of them are using hybrid groupwork, especially after the pandemic, when most of them were at the home towns and working remotely on tasks.

Lecturers defined Library, Study rooms & halls at dormitories, Lecture halls that are free/empty/available, MRU LAB building, Corridor spaces in the faculty buildings that are designed for studying, Inside Yard, Green areas (Campus area as a whole), Libraries at town as the main places for a focused learning. All of those spaces also were mentioned as suitable for a collaborative learning, just Canteens, Rothond Hall, Book cafes nearby were added additionally. Lecturers defined that students always can select from many places, university has plenty of them, but Corridor spaces in the faculty buildings that are designed for studying are a little shady, there is a lack of creative learning spaces, there should be more furniture, which can transform. Accordingly, barriers to access ILS on campuses were discussed with lecturers, but they are not concerned about restricted physical access. All lecturers commented that there are no important existing inequalities and barriers. Just a geographical barrier was mentioned. All lecturers stated that hybrid and remote learning activities have a lot of advantages, as faster and more convenient communication being the most important. Lecturers think, that online platforms have the potential to enhance interactions within a physical space by marking various areas where they could study, showing availability.

Summary: Key findings regarding user's perspective

The results show sense of belonging, interpersonal relationships, well-being and satisfaction on campus depends on availability and accessibility of informal learning spaces. It can be assumed that improving quality on campus will lead to greater integration of students and support increased student interaction, which in turn will lead to greater satisfaction and well-being. The feedback overall suggested that a hybrid learning, integration of digital technology is important for usage convenience. Comfort, air quality, temperature, noise, and light may all have an influence on productivity and creativity. Spaces should support concentration, but for the collaborative learning there shouldn't be controlled noise or other interruptions. Both focus groups discussed were mentioning almost the same informal learning spaces for focused and collaborative learning. Both, lecturers and students are mostly satisfied by the availability and accessibility of informal learning spaces at the university, since the university itself is small and not crowded by students. As mentioned in the previous chapter, students and lectures feel that there are enough informal learning spaces on campus. Thus, in summary, it can be recommended to have more creative spaces, because it is essential to make ILS more creative, where students can "feel the spirit" without lecturer supervision, more focused on collaboration.

References

Please use APA7 citation style for the references (https://apastyle.apa.org/instructional-aids/reference-examples.pdf)

Appendix A – Student survey

Item and scale analysis for every university

Akdeniz University Antalya

Name of Scale	Number of Items	Mean	Distri-bution	item-total-correlation	Reliability of scale (Cronbachs Alpha)
FL_Availability	3	ok	ok	ok	0,76
FL_Accessibility	4	ok	ok	Ok, except FL_AC_2 0,81, reliability without FL_AC_2 0,76, accepted	0,87
FL_Satisfaction	2	ok	ok	ok	0,82
CL_Availability	3	ok	ok	ok	0,84
CL_Accessibility	4	ok	ok	Ok, except CL_AC_2 0,85, reliability without CL_AC_2 0,83	0,89
CL_Satisfaction	2	ok	ok	ok	0,85
Satisfaction university campus	6	ok	ok	ok	0,87
Belongingness to your university	6	ok	ok	Not ok, B_U_2 -0,13, reliability without B_U_2 0,75	0,63 (6 item scale) 0,75 (5 item scale)
Satisfaction with interpersonal relationships	6	ok	ok	ok	0,88
Well-Being	5	ok	ok	Ok, except W_1 0,82 and W_3 0,83, accepted	0,89

HTW Berlin

Name of Scale	Number of Items	Mean	Distri-bution	item-total-correlation	Reliability of scale (Cronbachs Alpha)
FL_Availability	3	ok	ok	ok	0,81
FL_Accessibility	4	ok	ok	ok	0,85
FL_Satisfaction	2	ok	ok	ok	0,83
CL_Availability	3	ok	ok	Ok, except CL_AV_2 0,80, alpha without CL_AV_2 0,77, accepted	0,87
CL_Accessibility	4	ok	ok	Ok, except CL_AC_2 0,82, alpha without CL_AC_2 0,83	0,88
CL_Satisfaction	2	ok	ok	ok	0,85
Satisfaction university campus	6	ok	ok	ok	0,90
Belongingness to your university	6	ok	ok	Ok, except B_U_2 0,24, alpha without B_U_2 0,79	0,76 (6 item scale) 0,79 (5 item scale)
Satisfaction with interpersonal relationships	6	ok	ok	ok	0,89
Well-Being	5	ok	ok	ok	0,87

Mykolo Romerio universitetas – Vilnius

Name of Scale	Nr. Items	Mean	Distrib.	item-total-correlation	Reliability of scale (Cronbach)
FL_Availability	3	Ok, except FL_AV_1 and FL_AV_2 mean > 4,2	ok	Ok, except FL_AV_1 0,82, alpha without FL_AV_2 0,84 and FL_AV_2 0,84, alpha without FL_AV_2 0,84	O,90
FL_Accessibility	4	Ok, except FL_AC_1 and FL_AC_2 and FL_AC_1 and FL_AC_3 mean > 4,2	ok	Ok, except FL_AC_3 0,81, alpha without FL_AC_3 0,83	0,89
FL_Satisfaction	2	ok	ok	Not ok: FL_S_1 0,87,and FL_S_2 0,87	0,93
CL_Availability	3	Ok, except CL_AV_1 and CL_AV_2 mean > 4,2	Not ok	Ok, except CL_AV_1 0,81, alpha without FL_AV_1 0,84 and CL_AV_2 0,81, alpha without CL_AV_1 0,85 and	0,90
CL_Accessibility	4	Ok, except CL_AC_1 and CL_AC_2 mean > 4,2	Not ok	Not ok, CL_AC_1 0,86, alpha without item 0,94; CL_AC_2 0,91, alpha without item 0,93; CL_AC_3 0,90, alpha without item 0,93; CL_AC_4 0,87, alpha without item 0,94	0,95
CL_Satisfaction	2	Ok, except CL_Satisfaction_1 mean > 4,2	ok	Not ok, CL_Satisfaction_1 0,82,and CL_Satisfaction_2 0,82	0,83
Satisfaction university campus	6	ok	ok	Ok, except S_U_C_1 0,83, alpha without item 0,90 and except S_U_C_2 0,81, alpha without item 0,90 and except S_U_C_3 0,81, alpha without item 0,90 and except S_U_C_4 0,82, alpha without item 0,90	0,92
Belongingness to your university	6	ok	ok	Ok, except B_U_2 0,26, alpha without B_U_2 0,79	0,77 (6 item scale) 0,79 (5 item scale)
Satisfaction with interpersonal relationships	6	ok	ok	Ok	0,89
Well-Being	5	ok	ok	Ok, except W_3 0,82, accepted	0,92

Sapienza Università – Rome

Name of Scale	Number of Items	Mean	Distri-bution	item-total-correlation	Reliability of scale (Cronbachs Alpha)
FL_Availability	3	ok	ok	ok	0,81
FL_Accessibility	4	ok	ok	ok	0,82
FL_Satisfaction	2	ok	ok	ok	0,70
CL_Availability	3	ok	ok	Ok, except CL_AV_2 0,82, alpha without FL_AV_2 0,74	0,86
CL_Accessibility	4	ok	ok	ok	0,83
CL_Satisfaction	2	ok	ok	ok	0,76
Satisfaction university campus	6	ok	ok	ok	0,89
Belongingness to your university	6	ok	ok	Ok, except B_U_2 0,25, alpha without B_U_2 0,87	0,84
Satisfaction with interpersonal relationships	6	ok	Ok, except S_IR_2	ok	0,89
Well-Being	5	ok	ok	ok	0,87

Donau-Universität – Krems

Name of Scale	Number of Items	Mean	Distri-bution	item-total-correlation	Reliability of scale (Cronbachs Alpha)
FL_Availability	3	ok	ok	ok	0,78
FL_Accessibility	4	ok	ok	Ok, except FL_AC_1 0,82, alpha without FL_AC_2 0,88; and FL_AC_2 0,90, alpha without FL_AC_2 0,86	0,91
FL_Satisfaction	2	ok	ok	ok	0,82
CL_Availability	3	ok	ok	Ok, except CL_AV_1 0,85, alpha without CL_AV_2 0,85; and CL_AV_2 0,84, alpha without CL_AV_2 0,86	0,91
CL_Accessibility	4	ok	ok	Ok, except CL_AC_1 0,87, alpha without CL_AC_2 0,90; and CL_AC_2 0,870, alpha without CL_AC_2 0,70	0,96
CL_Satisfaction	2	ok	ok	Not ok, CL_Satisfaction_1 0,81,and CL_Satisfaction_2 0,81	0,89
Satisfaction university campus	6	ok	ok	ok	0,88
Belongingness to your university	6	ok	ok	Ok, except B_U_2 0,17, alpha without B_U_2 0,82	0,78
Satisfaction with interpersonal relationships	6	ok	ok	ok	0,89
Well-Being	5	ok	ok	Ok, except W_2 0,87 and W_3 0,85, accepted	0,90

Appendix B – Focus groups/interviews

Interview guide – students

Questions for the focus group interviews with students

Duration of focus groups: 100 minutes

In advance	**In advance, students get the campus maps, information regarding the project, and aspects which will be discussed in the focus groups** One/two weeks before the focus group: Contact the participants and ➢ Definition of informal learning places and focused/collaborative learning, ➢ ask them to fill out the survey (Word, PDF, paper&pencil) ➢ ask them to take pictures of their preferred learning places on campus ➢ send the Consent Form
Welcome, presentation of the project, agenda for the focus group	**15 min** Welcome! - Project NIILS (informal, inclusive learning environments) - Participants with fewer opportunities - Voluntariness, anonymity, confidentiality of all statements Short self-presentation of participants (warm-up) Name, study program, semester, where do I live, Show your picture(s) of your preferred learning places on campus
c) **used informal or non-conventional learning spaces** on students' knowledge acquisition: **Satisfaction** with the support and the learning environment **Map and Photos at MURAL-Board**	**Informal learning environments (20 min)** Definition "Informal learning spaces, […], are places of learning which can be selected independently by differentiated and self-organizing actors […]." (translated from Ninnemann & Jahnke, 2018, p.141) What places do you use for informal learning? ➢ a map of the campus and mapping of the important learning places ➢ Photos of preferred learning spaces on campus ➢ green cards for focused learning activities ➢ blue cards for collaborative learning activities

	***find the Link to the MURAL Board at the end of this document** In-depth questions (supported quantitatively, if necessary, or via point polling on the facilitation wall/flipchart): ➢ red dots for important places to learn ➢ Frequency of use in the last four weeks (favorite or most important place to learn?) ➢ Satisfaction with the most important/most frequently used learning location (strengths/weaknesses)
d) Existing **inequalities and barriers** related to informal or non-conventional learning spaces, including access to technical equipment and the internet as well as to physical-spatial environments conducive to learning and well-being	**In-depth inequalities and barriers (20 min)** ➢ Look at the most frequently / preferred learning places and tell us about the existing barriers: ➢ What are the barriers that you face in accessing informal learning places? ○ Possible answers: opening hours, registration /controlled access, physical barriers) ➢ Are there any obstacles regarding the availability of informal learning places? ○ Possible answers: not enough places, too crowded, environmental factors (light, temperature, acoustic, air), atmosphere/well-being, technological infrastructure (plugs, wifi) ➢ In the project, we also focus on students with "fewer opportunities". We have a broad perception of fewer opportunities, including a wide range of aspects: Physical impairment (e.g. mobility, visual, auditive); Chronic somatic disease (e.g. multiple sclerosis, cancer, diabetes); Mental disease (e.g. Burnout); Learning disabilities (e.g. Dyslexia, Dyscalculia, ADHD); Cultural differences (e.g. different cultural background to my university); Language (I do not study in my mother tongue.); Economic obstacles (e.g. financial barriers); Need to work for a living while studying; Family-related obstacles (e.g. responsible for children or nursing cases); Geographic obstacles (e.g. remote residence); Age: Think again, what are the barriers? What have you experienced yourselves?
e) Students' and lecturers' **awareness and enabling strategies** to deal with	**Awareness and existing strategies to decrease inequalities (15 min)** ➢ What do you think: Are your lecturers and the university administration know these barriers?

existing inequalities and barriers	➢ Are you aware, or do you know if anything is being done to break down these barriers? ➢ What could be done in the future to reduce these barriers?
Hybrid and virtual learning activities	**Definition Hybrid Activities:** combining activities concerning space (physical and virtual spaces) and time (synchronous and asynchronous activities; see Reinmann, 2021, S. 4) *Examples:* students meet partly physical and remote to discuss a presentation (e.g. Zoom), and students work together on a document (e.g. file sharing). Students get course material after class via the university provided learning platform (e.g. Moodle) **Hybrid and virtual learning activities (20 min)** Hand out the following questions as a questionnaire or prepare them in the MURAL Board or on the moderation wall. In-depth questions: 1. Can integrating services in the virtual space (apps, etc.) help you overcome barriers you are facing when using the campus? 2. How could an online platform make interacting within a physical space easier? 3. If you are in a physical environment, how could an online platform make it easier to interact with other students or colleagues who are over distance?
Summary, open questions by the participants, acknow-ledgement, and farewell	**10 min**

Interview Guide – Lecturers

Questions for the focus group interviews with lecturers

Duration of focus groups: 90 minutes

Welcome, presentation of the project, agenda for the focus group	**Welcome 15 min** – Welcome the participants – Collect the Consent Form – Start the audio transcription – Give information about the NIILS Project (informal inclusive learning environments) and the focus group – Participants are lecturers from different status groups (professor, lecturer, research associate) – Conditions are: Voluntariness, anonymity, confidentiality of all statements – Short self-presentation of participants (warm-up): name, faculty/study program, professional background, which campus working/teaching
c) **used informal or non-conventional learning spaces** on students' knowlegde acquisition: **Satisfaction** with the support and the learning environment **Campus Map on Mural or on moderation wall** (if lecturers do not know any spaces, you might use pictures)	**Informal learning environments (15 min)** – Which spaces for informal learning environments do you know? (Mark the spaces with dots on a Campus Map on MURAL or on a moderation wall) – How do the students use these spaces? Which spaces are used for focused learning activities? Which spaces are used for collaborative (community/group) learning activities? – What places do <u>you</u> use for meetings/interaction with students outside of courses and formal teaching situations? – Are you satisfied with the existing informal learning places for students? • If yes, why? Which characteristics are satisfactory? • If no, why not? What are the reasons?
d) Existing **inequalities and barriers** related to informal or non-conventional learning spaces, including access to technical equipment and internet as well as to physical-spatial	**In depth inequalities and barriers (15 min)** ➢ How do you evaluate the **access** to existing informal learning places on campus and in the surrounding? ➢ Are you aware about any barriers that students face in accessing the informal learning spaces you mentioned? ○ Examples: opening hours, registration /controlled access, physical barriers ➢ How do you evaluate the **availability** of existing informal learning places?

environments conducive to learning and well-being PPT: List of categories for fewer opportunities	➢ Are there any obstacles regarding the availability of informal learning places? ○ Examples: not enough places, too crowded, environmental factors (light, temperature, acoustic, air), atmosphere/well-being, technological infrastructure (plugs, wifi) – Now we want you to consider the **students with fewer opportunities** which can be identified as: ... (Read out/present categories out of the survey for students with "fewer opportunities") ○ Physical impairment (e.g. mobility, visual, auditive); Chronic somatic disease (e.g. multiple sclerosis, cancer, diabetes); Mental disease (e.g. Burnout); Learning disabilities (e.g. Dyslexia, Dyscalculia, ADHD); Cultural differences (e.g. different cultural background to my university); Language (I do not study in my mother tongue.); Economic obstacles (e.g. financial barriers); Need to work for living while studying; Family related obstacles (e.g. responsible for children or nursing cases); Geographic obstacles (e.g. remote residence); Age: – Are you aware if any of these groups of students face challenges in accessing and using the informal learning places? Have you observed any difficulties and barriers for these groups of students? If yes, what type of challenges?
e) Lecturers' **awareness and enabling strategies** to deal with existing inequalities and barriers	**Awareness and existing strategies to decrease inequalities (15 min)** – What do you think: Are these barriers known by your students and the university administration? – Are you aware or do you know if anything is being done to break down these barriers? – What could be done in the future to reduce these barriers? – Which strategies would decrease existing inequalities and barriers in accessing and using the informal learning spaces?
Hybrid and virtual learning activities	**Definition Hybrid Activities:** combining activities with regard to space (physical and virtual spaces) and time (synchronous and asynchronous activities; see Reinmann, 2021, S. 4)

PPT: List of in-depth-questions	*Examples:* students meet partly physical and remote discussing a presentation (e.g. Zoom), students work together on a document (e.g. file sharing). Students get course material after class via the university provided learning platform (e.g. Moodle) **Hybrid and virtual learning activities (15 min)** Hand out the following questions as a questionnaire or prepare them in the MURAL Board, on the moderation wall or in a power point presentation. In-depth questions: 4. Can the integration of services in the virtual space (apps, etc.) help students to overcome barriers they are facing when using the campus? 5. How could an online platform make interacting within a physical space easier? 6. If students are in a physical environment, how could an online platform make it easier for them to interact with other students who are over distance?
Summary, open questions by the participants, acknowledgement and farewell	**15 min**

Coding list

The table below lists the deductive codes/subcodes (additional codes/subcodes arose inductively):

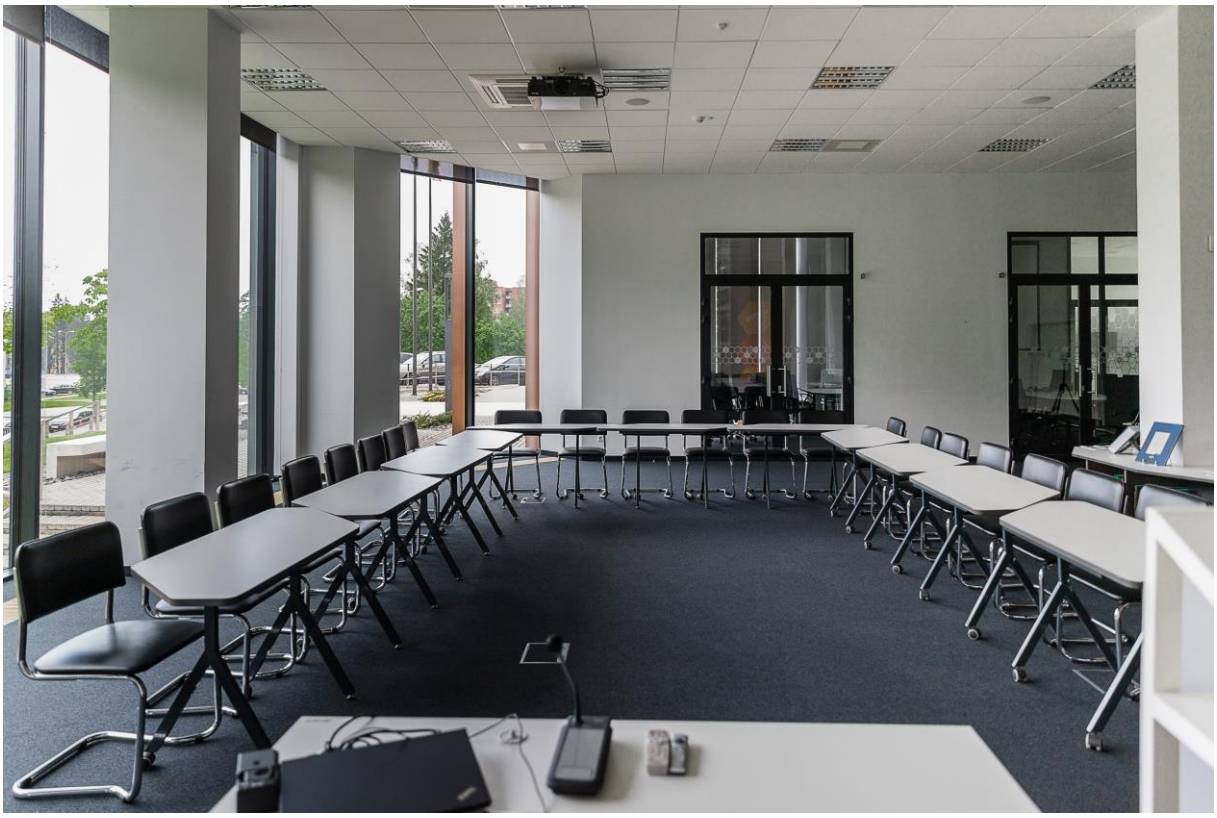
Codes	**Subcodes**
Informal Learning Spaces on Campus	Focused Informal Learning Spaces
	Collaborative Informal Learning Spaces
	Informal Learning Spaces Used for Meetings
	Satisfaction
Barriers to Access	Opening Hours
	Registration/Controlled Access
	Physical Barriers
Barriers to Availability	Limited Availability/Crowded
	Atmosphere/Well-being
	Technological Infrastructure
Awareness of Barriers	Barriers to SWFO
Strategies to Mitigate Barriers	
Support through Virtual Spaces	Hybrid Groupwork

Appendix C – Images of locations

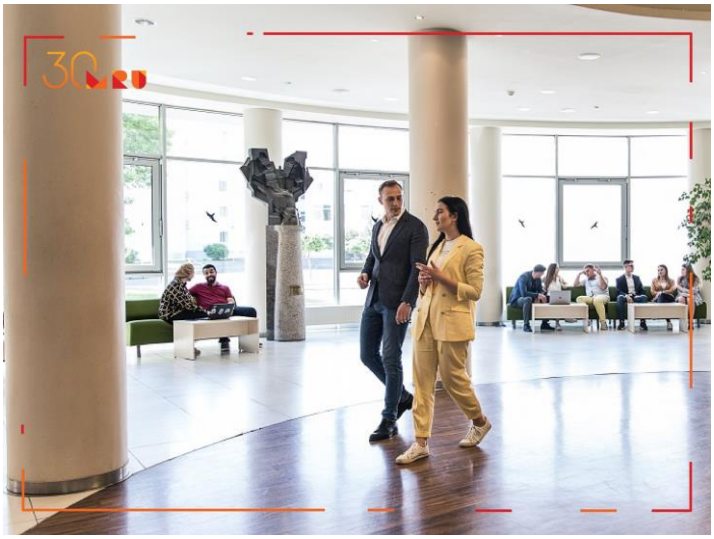
Library

Cafes on campus

MRU LAB



Rothond hall



MRU yard

Interim spaces