APPROFONDIMENTI

# c. Part FFHS: Physical work environments at SUPSI for informal learning.

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# Introduction

The focus of our research lies on spaces for informal learning in higher education. The main research question examined in this study was “What is the potential of the physical work environments at SUPSI to promote informal learning among students?” The students' perspective is considered.

# Informal Learning

According to OECD, informal learning is never organised, has no set objective in terms of learning outcomes and is never intentional from the learner’s standpoint. Often it is referred to as learning by experience or just as experience (Werquin, 2010).

# Campus spaces & activities

Since we are interested in informal learning that happens on the SUPSI campus, we relate to all spaces, where informal learning occurs, as “campus spaces” and to activities in these spaces as “campus activities”. Following the definition of spaces by Keppell & Riddle (2013), we define campus spaces as:

• physical environments that enhance as opposed to constrain informal learning;

• physical areas that motivate a user to participate in campus activities;

• spaces where both teachers and students optimize the perceived and actual affordances of the space;

• spaces that promote authentic interactions.

Dealing with two under-researched concepts - informal learning and campus spaces - with the focus on investigating all related student activities that occur on campus, we make an attempt to bring these two concepts together to gain first insights of the potential of physical environments on campus for enhancing informal learning outcomes for students.

# Methods

We used a descriptive survey approach to answer the research question. This method allowed us to gain the first insights of the potential of physical campus spaces in regards to informal learning on campus.

# Participants

The participants of the study included SUPSI students of different departments. The dataset comprised data of 285 (n*) students.

# Measures

We used a questionnaire with open and closed questions as a research method. The first two questions (Q6, Q7) had an open character. For Q6 students were asked to indicate three non-study activities and spaces on campus, where the mentioned activities occurred. Q9 was to gain an understanding of what kind of activities (except studying) students wish to pursue on campus in the future: *“Q9. Quando sei alla SUPSI, oltre a studiare e seguire i corsi (apprendimento intenzionale), che tipo di attività ti piacerebbe fare?“*. Q7 and Q10 had a closed character. The awareness of informal learning was measured with a single item, such as, *"Q7. Durante le attività che hai menzionato, sei consapevole che stai comunque imparando qualcosa?"* For each item of Q10 the participants were asked to rate how important the specific characteristics of physical spaces are for supporting the mentioned non-study activities on campus. A five-point graphical scale ("stars") was used. However, the 5 "star"- points were not labelled. For data analysis the following labelling was considered: 1 = unimportant, 2 = somewhat unimportant, 3 = neither important or unimportant, 4 = important, 5 = very important. The descriptive statistics (e.g.

frequency) were used to analyse the quantitative data. When analysing the free answers, content analysis was used with the responses being assigned to categories. The inductive method for the development of categories was applied.

# Results

A discussion of the results generated from the research question in our study is provided here.

Figure 1. shows all types of campus activities that students (n* = 285) pursue on campus excluding intentional learning for curriculum. Multiple mentions of activities (n =431) pro one participants were coded separately.

In response to the open-ended question *"Q6. Quando sei alla SUPSI, oltre a studiare e seguire i corsi (apprendimento intenzionale), che tipo di attività sei solito fare e dove (luogo/spazio)?"* 285 students reported 431 different campus activities. Using inductive method for the development of categories, we classified the 431 campus activities in 11 sub-categories, e.g. "reading", "searching literature, information", "lunch", which fall into 6 categories:

Focus

Learning

Recreation, private moments

Socializing

Technology

Other activities

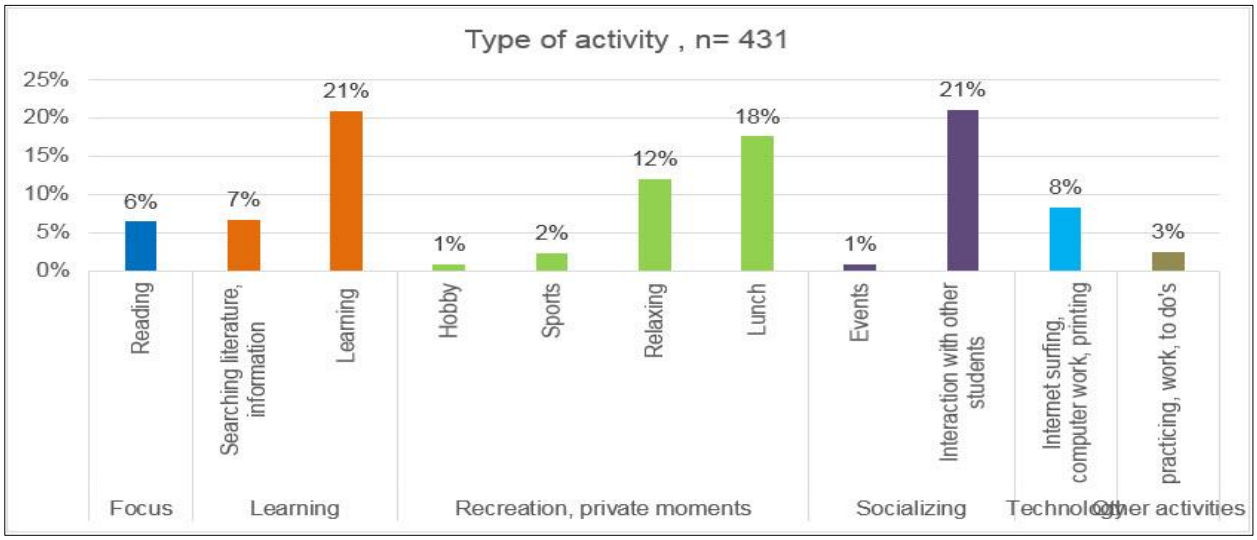


*Figure 1 Campus activities*

Of 431 different non-study activities, 21% of activities fall into the sub-category "interaction with other students" (category: socializing). Students meets each other for sharing information, experience or having conversation. 18% of activities belong to the sub-category "lunch" (category: recreation, private moments). Although the students were asked to indicate only non-study activities they pursue on campus, some learning activities (21%) (sub-category: learning) were mentioned that related to intentional learning for the curriculum, such as "learning in a group", "learning alone", "revising lecture notes", "doing homework", etc.

A similar approach for building sub-categories was applied for categorising types of spaces on campus. Following frequently used classifications of spaces in literature (Crook & Mitchell, 2012; Souter, 2011; Vo Ngoc. T. B., 2015), we identified 5 main categories of campus spaces:

Anywhere

Formal spaces

Corridor and spaces within corridor

Gathering spaces

Library

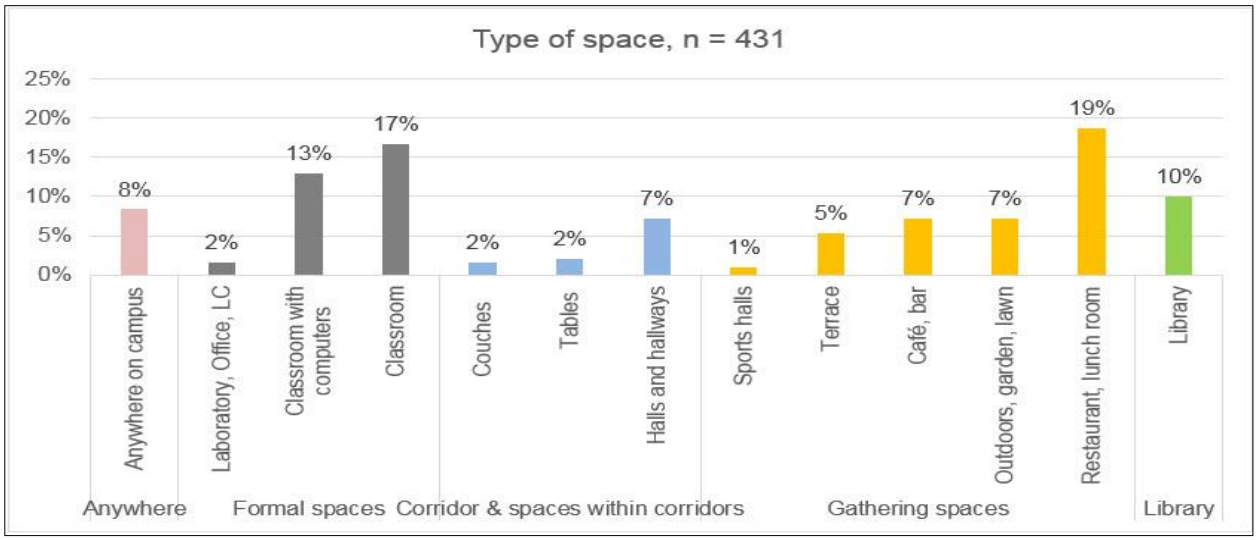


*Figure 2 Campus spaces*

Of all activities 19% take place in a restaurant and lunch room, 7% outdoors, in the garden and on the campus lawn. The rest of activities (13%) of the same category "gathering spaces" occurs in sports halls, on the terrace, in a café and bar. Interestingly, that formal spaces on campus (category: formal spaces), such as classrooms (17%), classrooms with computers (13%) and a laboratory, office, learning center (2%) are frequently used for non-study activities by students. However, it should be noted that the reported activity "learning" (following our definition, it does not belong to a non-study activity) falls into the same category. The figures 3 - 9 below show, how each activity (< 5% not depicted) is distributed over the campus spaces.

"Reading" happens mainly in "formal spaces" (22%) and "library" (39%), (figure 3).

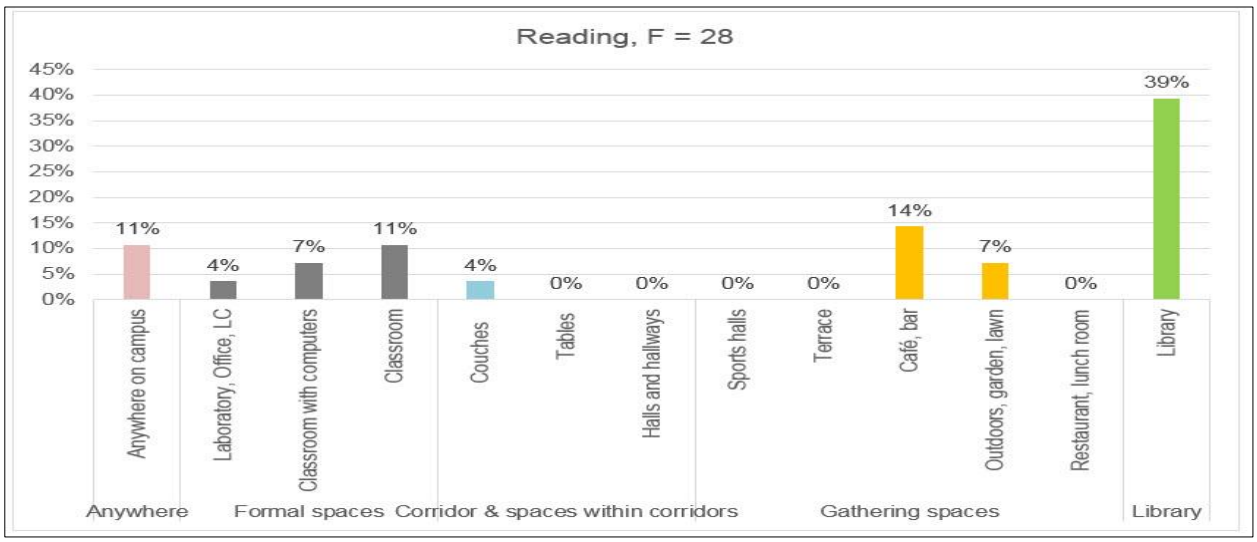


*Figure 3 Reading spaces*

“Literature search” happens mainly in “formal places” (48%) and “library” (48%), (figure 4.).

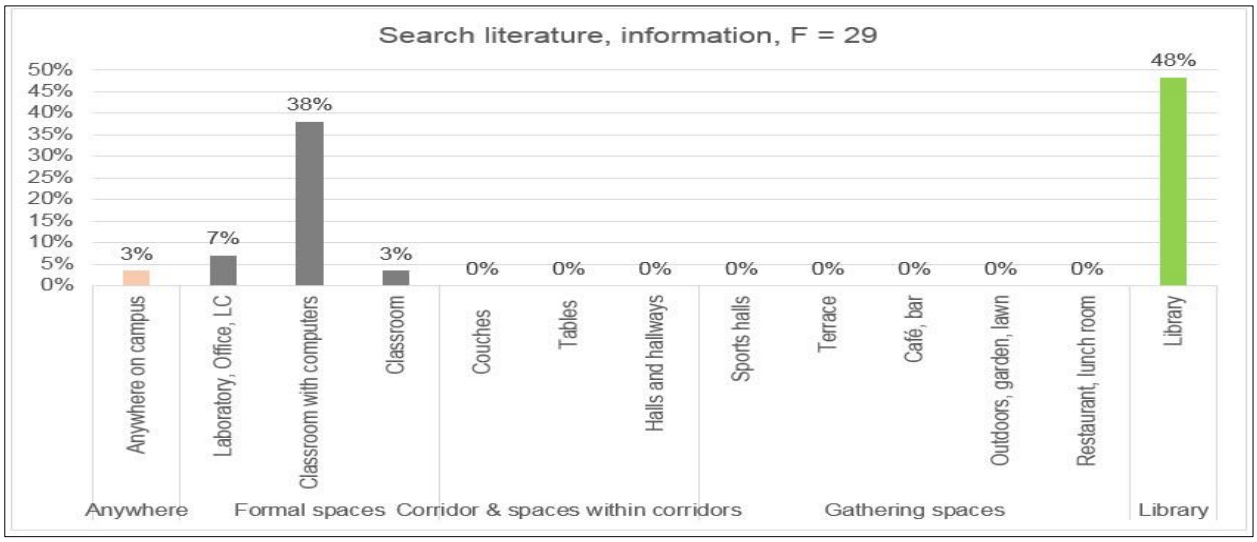


*Figure 4 Literature search spaces*

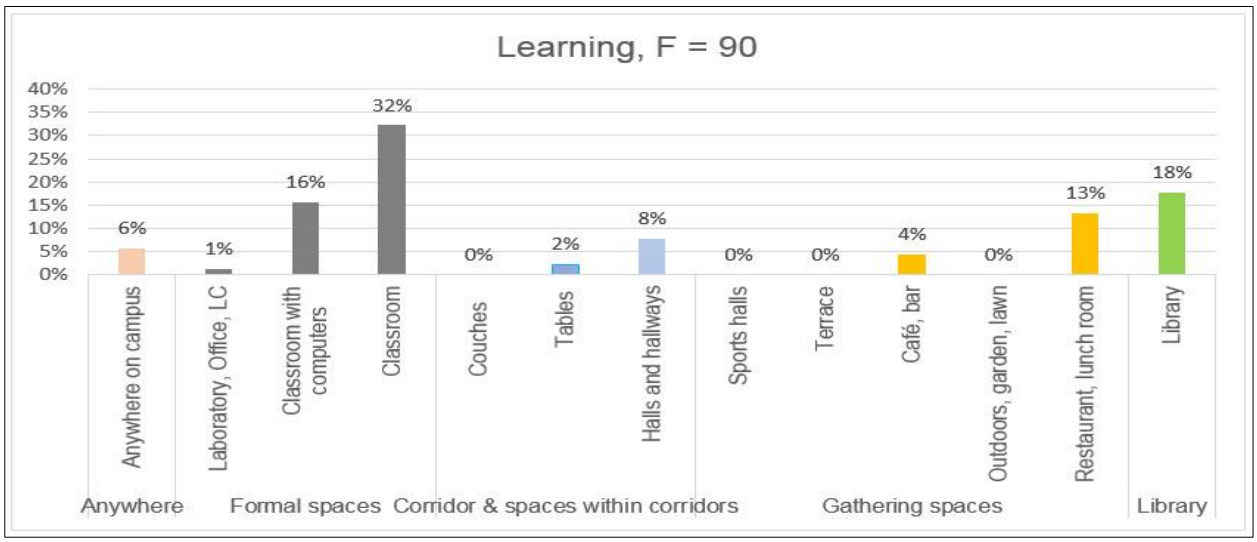


*Figure 5 Learning spaces*

The activities that were assigned the category “relaxing” happen mainly in “corridors and spaces within corridors” (17%) and “gathering spaces” (64%), (figure 6.).

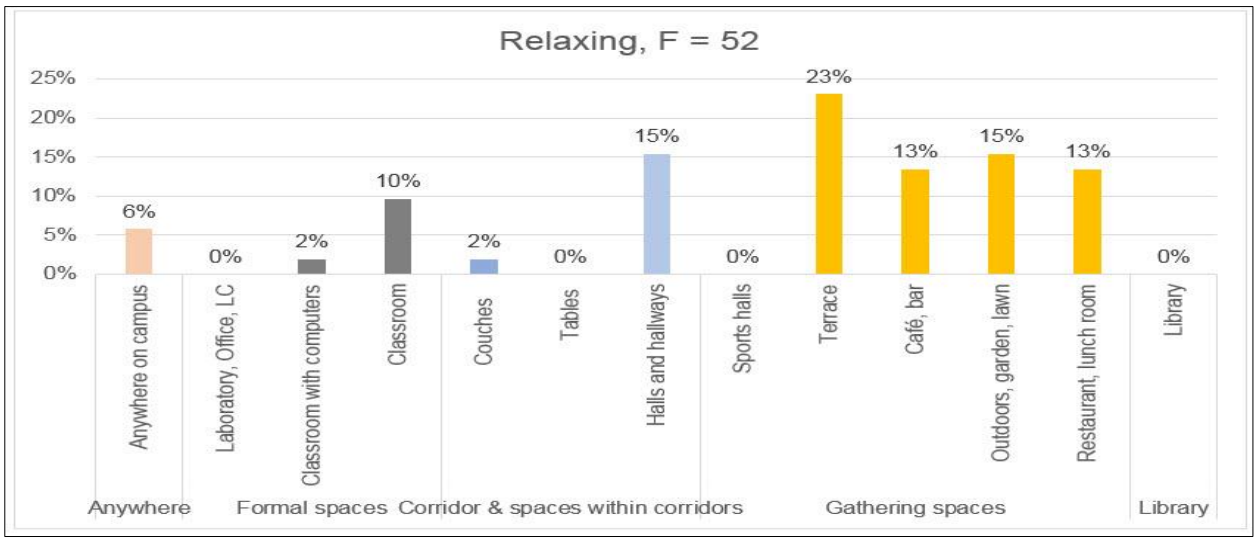


*Figure 6 Relaxing spaces*

"Lunch" happens mainly in three types of spaces "formal spaces" (12%), "corridors and spaces within corridors" (12%) and "gathering spaces" (67%), (figure 7).

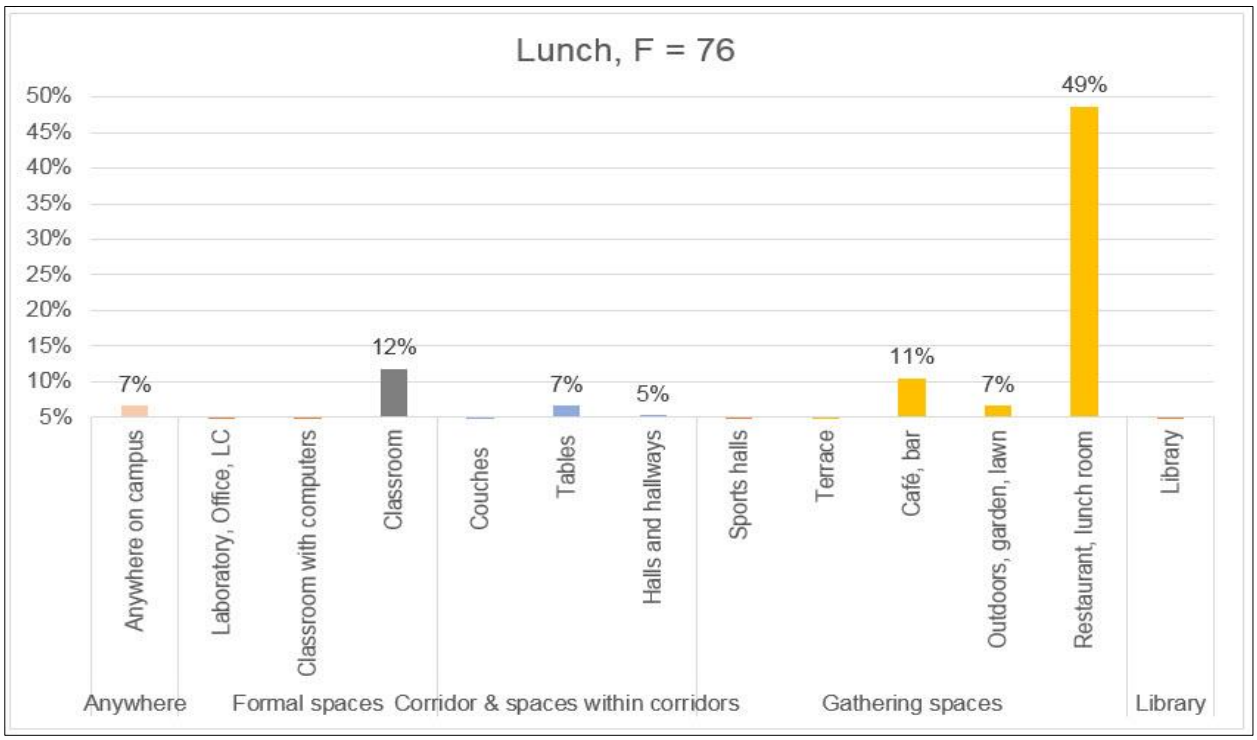


*Figure 7 Lunch spaces*

"Interaction with other students" happen mainly in three types of spaces "formal spaces" (15%), corridor and spaces within corridors" (15%), and in particular "gathering spaces" (57%), (figure 8).

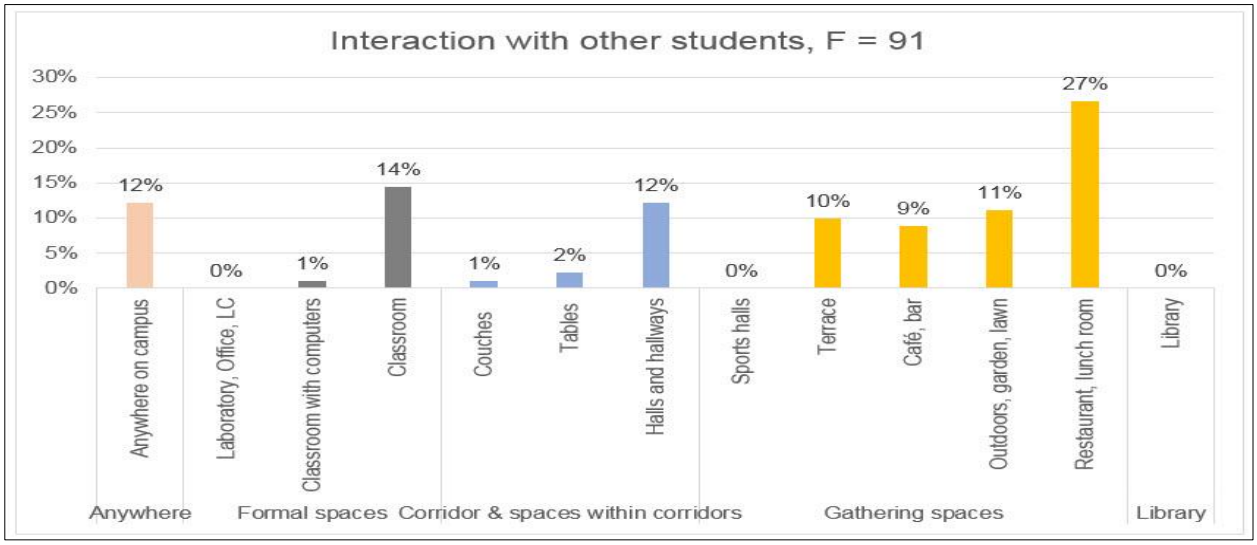


*Figure 8 Spaces of interaction among students*

The activities such as “internet surfing”, “computer work” and “printing” assigned to the dimension “technology” happen mainly in “formal places” (88%), (figure 9).

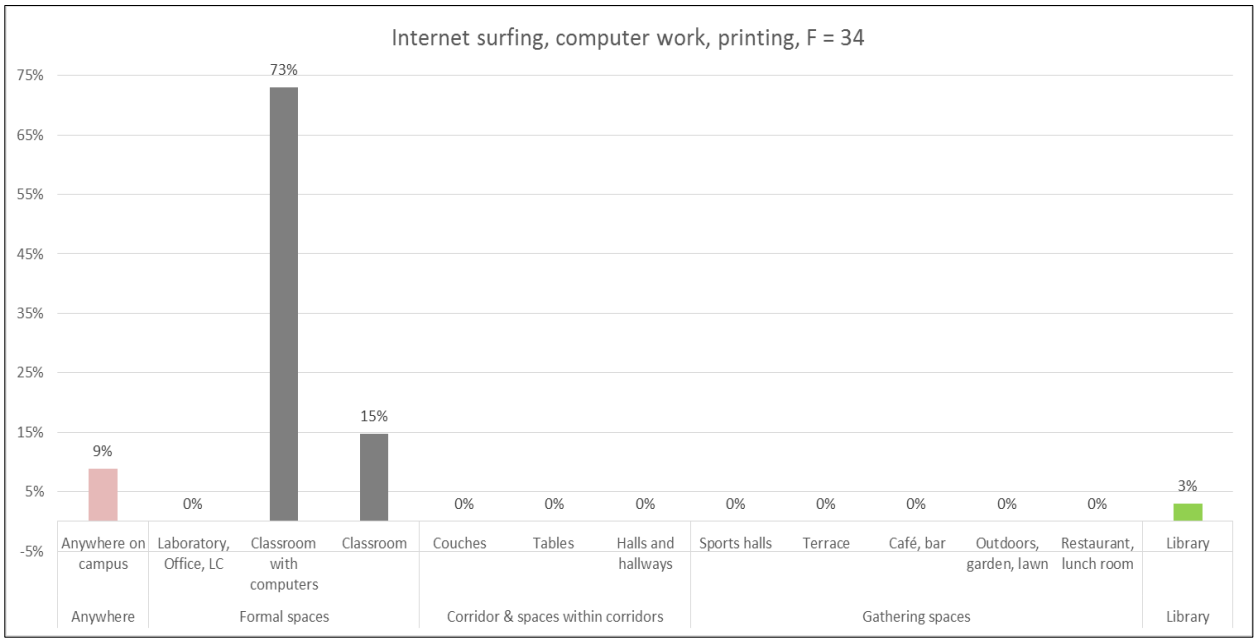


*Figure 9 Technology spaces*

It is interesting to note, that the formal space “classroom with computers” is frequently used for many activities e. g. “reading”, “search literature, information”, “learning”, “internet surfing, computer work, printing” and even “relaxing”. The students reported that a classroom with computers was most commonly used for the activities such as “searching literature, information” (38%, F = 29) and “internet surfing (73%, F = 34), (see figures 4., 9.).

Gathering spaces seem to be in particular important for such activities as “relaxing” (F = 52), “interacting with other students” (F = 91), and having lunch (F = 76), (see figures 7.,8.,9.).

In addition, the results confirmed the general trend in the literature. The corridor and spaces within corridor (in the literature known as “spaces in between”) gain in importance in higher education. Also at SUPSI they were frequently used in particular for “relaxing” (17%, F = 52) and “interacting with other students” (15%, F = 91),

In response to the open-ended question *"Q9 Quando sei alla SUPSI, oltre a studiare e seguire i corsi (apprendimento intenzionale), che tipo di attività ti piacerebbe fare?",* 285 students reported 177 wished non-study activities that they would like to pursue on campus in the future. A similar approach for building sub-categories and categories of whished activities was applied as for current activities,(see figure 10).

Besides already identified activities, new wished activities were identified: attending courses (5%), practicing (5%), "participating in creative activities" (5%), "interacting with teachers" (1%), "social and political engagement" (1%), "nothing". However, 21% of the responses of whished activities pertained to the category "nothing". A deeper analysis of this category showed that the students had two main reasons for reporting that they do not wish to do any non-study activities on campus: "no need " and "the lack of time for extracurricular activities":

*(ID 142): "Solitamente non abbiamo tempo per svolgere le attività proposte dalla SUPSI"*

*(ID 169): "Molte, purtroppo però l'impegno per me è così eccessivo che non ho spazio per nessuna attività non obbligatoria".*

*(ID 273): "Avendo già un'attività lavorativa molto intensa (spesso più di 8 ore lavorative al giorno) e dovendo frequentare i corsi in orario serale presso la sede di Manno, preferisco impiegare il mio tempo al di fuori, per quanto sia possibile, dalla SUPSI".*

*(ID 308): "Purtroppo essendo iscritta al PAP ho poco tempo per altre attività. Lavoro a tempo pieno (80%) e il restante 10% seguo le lezioni e studio"*

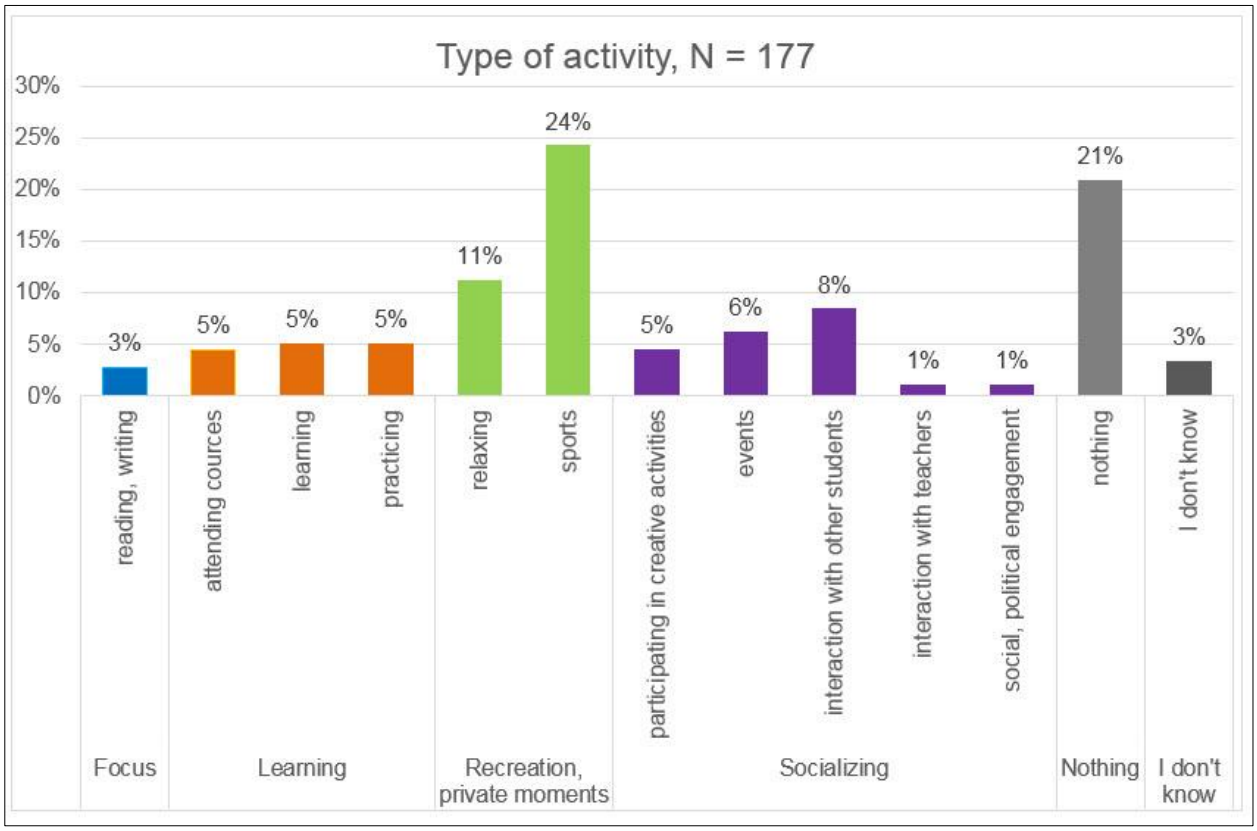


*Figure 10 Wished activities*

# Informal Learning

The attempt to measure informal learning during the non-study activities was obtained by using the following question: *"Q7 Durante le attività che hai menzionato, sei consapevole che stai comunque imparando qualcosa?"* The 239 responses were given (16% - missings).

The results show that 54 % of the participants (N =285) experience informal learning (= still learning

something) during the activities they mentioned. Only 4 % replied that they were not learning anything while pursuing the mentioned activities. 15% had difficulty to identify whether informal learning happened or not. 11 % of the participants had difficulties in answering the question.

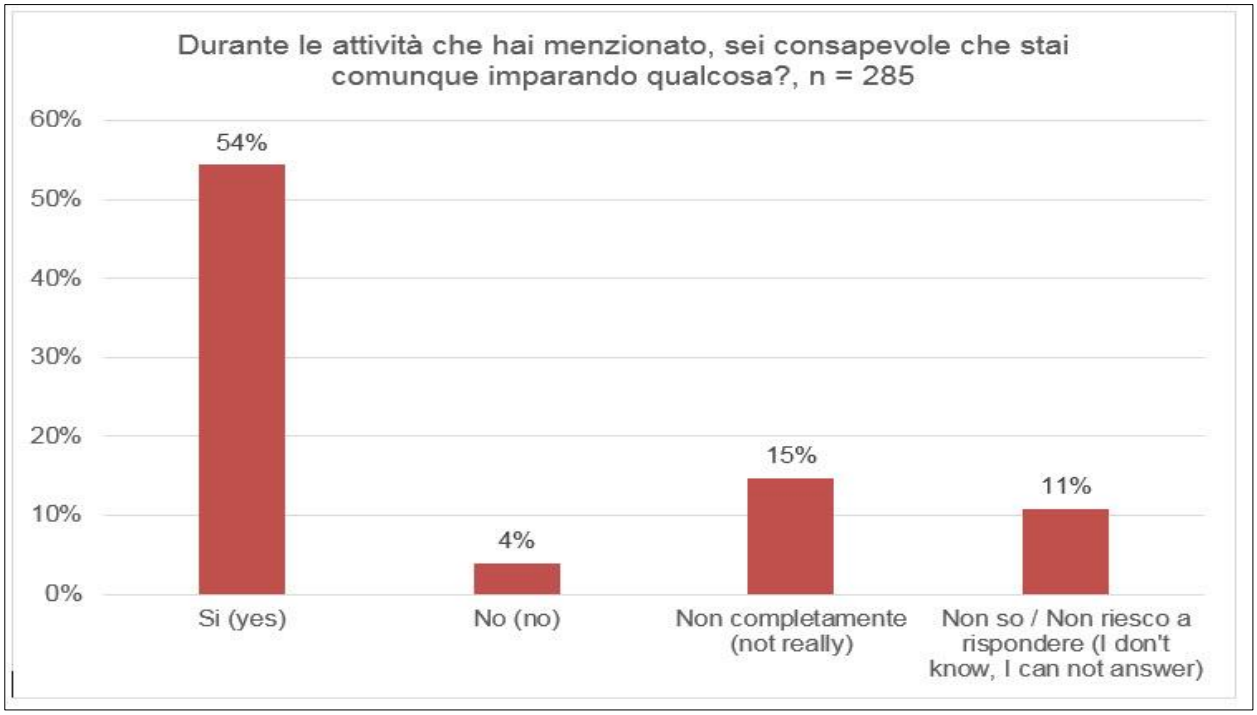


*Figure 11 Awareness of informal learning*

# Characteristics of campus spaces

Table 1. shows the mean scores of the characteristics of campus spaces that students reported to be important for facilitating indicated non-study activities on campus: *"Q10 Per favorire le attività extra-studio che hai menzionato, sono importanti le seguenti caratteristiche dello spazio fisico nelle quali avvengono?"*.

| ***Variables*** | ***Mean*** | ***SD*** |
|---|---|---|
| ***...-Il design degli spazi (rumore, luce, colori, dimensioni, mobili, posizione e dotazione, eccetto tecnologia)*** | *3.8* | *1.09* |
| ***...-la dotazione tecnologica*** | *3.4* | *1.27* |
| ***...-le emozioni, i sentimenti e gli stati d'animo evocati*** | *3.8* | *1.13* |
| ***...-la facilità d'accesso (il luogo è vicino a mezzi pubblici, con accessi comodi, visibili, etc.)*** | *4.1* | *1.09* |
| ***...-la facilità di ingresso (il luogo rimane accessibile per molte ore al giorno oppure 7 giorni su 7, ecc.)*** | *4.2* | *1.04* |

*Table1. Descriptive Statistics for all Variables (n = 285)*

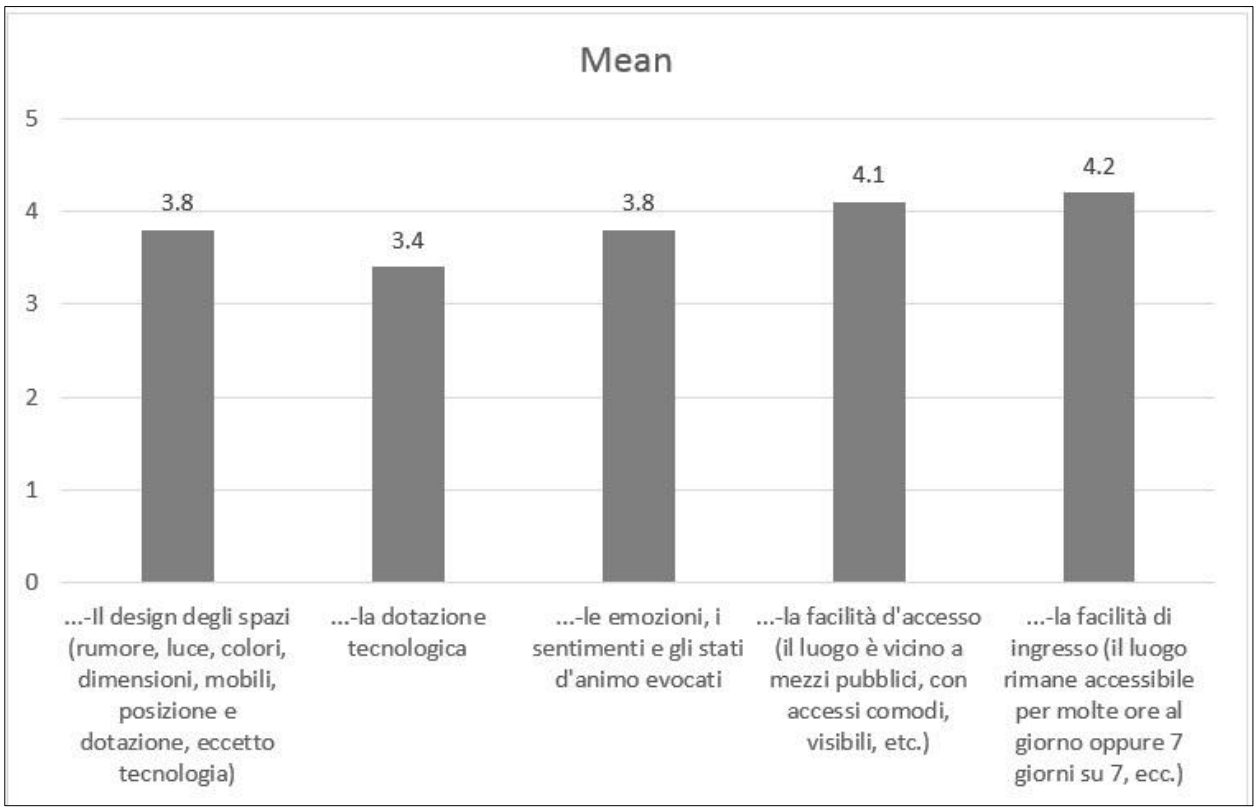


*Figure 12. Comparison of the mean scores of the characteristics of campus spaces*

# Conclusion

Two classifications of non-study campus activities and campus spaces at SUPSI were developed.

The results of this study give an insight into the current non-study activities that the students pursue on campus as well as the campus spaces where these activities occur. In addition, the whished non-study activities of the students were captured and new types of activities were identified.

In relation to informal learning, the results showed that more than 50 percent of the students were conscious of learning something while pursuing their non-study activities. Taking into consideration the difficult character of the construct "informal learning" itself, the obtained results cannot be neglected. In contrast, the results show the importance of providing opportunities for enabling and facilitating non-study activities on campus. However, the instrument for measuring informal learning, especially in the context of higher education, still needs to be further developed and validated.

In addition, the results gain the first insight into the campus space characteristics that seem to be important for supporting non-study activities. Future research could be focused on exploring design characteristics of campus spaces that impact the process of informal learning as well as on developing a better understanding of the link between informal learning and space.

Practical recommendations:

To support such activities as “reading”, “relaxing”, “interaction with other students” and a wished activity “interaction with teachers”, consider to furnish corridor and spaces within corridor (“spaces in between”) with built-up seating and lounge furniture (fig. 13) that support both individual activities and activities including interaction between students and/or teachers. The furniture can be used between classes, while waiting for a class to begin, or while waiting to meet with a faculty member. Having the appropriate space available at the appropriate time can foster serendipitous encounters among students and educational staff und, hence, increasing a chance for informal learning (Painter et al., 2013).

*Fig. 13. University Wageningen, learning environments for students and employees (Kohlert et al. 2015: 30).*

The classroom with computers seems to be relevant for “internet surfing”, “computer work” and “printing”. Hence, continue to provide a general-access to classroom with computers, but also to technology and digital communications in general. Consider to furnish the classroom with additional comfortable seating for individual activities and waiting moments as well as to equip the classroom with additional outlets for laptops;

Consider to provide additional dedicated spaces for quiet individual activities e.g. in spaces within corridors and/or gathering spaces, because “writing” and “reading” activities assigned to the category “focus” (3%, N = 177) as well as “relaxing” activities (11%, N = 177) belong to the wished activities, the students would like to pursue on campus. Consider e.g. room-in-room solutions (fig. 14.) while furnishing.

*Fig. 14. University Kopenhagen Lyngby. Room-in-room solutions (Kohlert et al. 2015: 18).*

Consider to create so called “makerspaces” (fig. 15.) equipped with appropriate materials for supporting creative activities (5%, N = 177) or practicing activities (5%, N = 177).


*Fig. 15. Makerspaces for education (http://www.makerspaceforeducation.com/makerspace.html, 17.10.17)*

Consider to create on-campus “breakout” areas (fig. 16.) e.g. in spaces within corridors and gathering spaces for intensifying the interaction of students on campus. Enhanced opportunities for socializing

increase a chance for informal learning experiences (Painter et al., 2013);

*Fig. 16. Breakout area at Melty Group, Paris, Office 21 Project 2015*

Consider the access to facilities 24 hours a day, 7 days a week;

Create more opportunities for sport activities, because 24 percent of all wished activities (N = 177) belong to sport activities.

Consider aesthetics and design characteristics (colour, noise, light, etc.) in general;

Involve students in the design of campus spaces so that they are more conductive for informal learning (Keppell & Riddle 2013);

# Literature

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