LTSHE

Learning and teaching space in higher education

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KEY ACTION

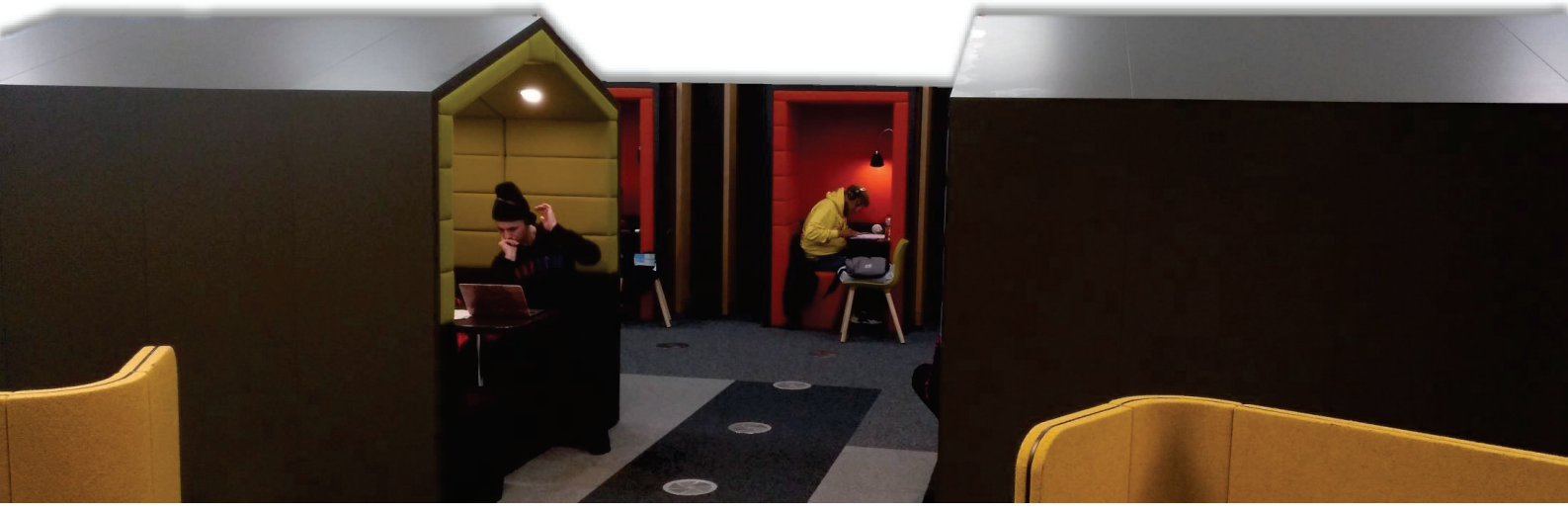
Cooperation for innovation and the exchange of good practices

ACTION TYPE

Strategic Partnerships for higher education

WEB INFORMATION

https://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details/#project/2019-1-UK01-KA203-061968
https://www.evalag.de/ltshe



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INTELLECTUAL OUTPUT 2

Case Studies of Experience:

designing and developing learning spaces in Spanish Higher Education

The Case of UPNA
(Universidad Pública de Navarra)

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Executive Summary

The present report presents the outcomes of the case study on the experiences at the Universidad Pública de Navarra (UPNA) of Spain, in regard to the topic of Learning&Teaching spaces.

The document is part of Intellectual Output 2 of the *Erasmus+ Learning and Teaching Spaces in Higher Education* (LTSHE) project.

UPNA has two main seats, in the cities of Pamplona and Tudela. Both are located at the Comunidad Foral of Navarra, one of the regions of Spain. Due to its dimension, the main outcomes of the present document are centered in the most important campus, located in the South periphery of the city of Pamplona.

The Universidad Pública de Navarra (UPNA) and its main campus (named Arrosadía campus) are quite recent, as the Institution was founded in 1987. The main campus started its construction around 1988, and continued the erection of its several buildings in the following years (the Tudela campus was opened in 2008). In 2011, the UPNA proposed a relevant project of aggregation under the official Program launched by the Ministry of Education of Spain "*Campus de Excelencia Internacional*", together with the universities of Zaragoza, La Rioja and Lleida.

The Arrosadía campus has continued up to date its physical evolution, with the construction of new buildings and transformation of internal spaces in some of them. As all universities, in 2020 the UPNA had to face the difficulties derived from the pandemic COVID-19, implying the need of combining presential and online activities.

Under the impulse of the present *Erasmus+ Learning and Teaching Spaces in Higher Education* (LTSHE) project, the UPNA is planning future actions in regard to innovation in physical Learning&Teaching spaces, at its several scales.

The case study of The Universidad Pública de Navarra (UPNA) is based on a combination of two main dynamics:

First: a research process carried out to identify the theoretical foundations which affect Learning&Teaching physical spaces

Second: design and implementation of questionnaires, in order to develop interviews with three focus groups (students, faculty and managers).

Once completed the mentioned couple of dynamics, and in order to foster future processes of transformation of L&T spaces, looking for innovation, presentations and meetings with the Rectoral Team were carried out. The main purpose has been to communicate both the outcomes of the Erasmus+ Project as well as some suggestions of future strategies for the application of those outcomes in the next years at the UPNA.

In order to structure adequately all the contents, research activities and questionnaires, the UPNA Team designed in the very beginning a basic classification of Learning&Teaching spaces in HE, according to the following 4 basic scales:

- University-City scale.-This scale affects the physical relation between the university precincts and the correspondent urban environment (other buildings and Heritage pieces, open areas, infrastructures, streets and squares, amongst other elements)
- Campus scale.-This scale relates to the university precinct, as a complex with enough dimension and differentiation in relation to the context (urban or natural). A campus consists in a global unified complex, composed by built volumes and open spaces (where Nature and Art have to play a key role)
- Building scale.-This scale corresponds to the architectural piece, as an independent unit. Due to its neat corporeity, a building has the capacity of projecting visually most of the values of the institution
- Classroom scale.-This scale refers to the minimum pedagogical cell, which is normally located inside university buildings.

The case study carried out at UPNA reveals that there is a certain level of unsatisfaction among the members of the different groups which compose the university community (essentially, students and faculty, although some managers show as well their objective evaluation of L&T as something yet to be optimized). Besides, there is a clear feeling of motivation towards the nest future, as the diverse groups are aware of how learning and teaching are affected by physical spaces, at the 4 main scales: city, campus, building and classroom.

In order to remark the main outcomes of the process carried out at the UPNA, some conclusions and recommendations can be highlighted. Next, an executive summary of the described contents is expressed, following the general structure based on the 4 scales of physical spaces (city, campus, building, classroom):

A.-CITY SCALE

- **General comments**
  - The functional and physical synergies of the UPNA with respect to the city of Pamplona constitute a potential resource of great value, to mutually enrich both institutions
  - Since its implementation, the UPNA campus has favoured the progressive growth of the city and its facilities in its zonal environment
  - The UPNA must increase its visibility in the central urban area of Pamplona, implementing new information centers or points; this dynamic would symbolically reinforce the urban origins of the educational institution

- In parallel, the active presence of the UPNA in socially disadvantaged urban environments could contribute to its requalification.
- As a specific situation, the groups consulted point out that the existing parking on the northwest edge (towards Avenida de Cataluña), generates a certain physical and visual barrier, not offering an adequate image of presentation of the UPNA with respect to its main access

- **Strategic plans and actions**
  - To enrich each other, the UPNA and the city of Pamplona should undertake a joint action planning, which would optimize the existing resources in both parts, and thus contribute to social and training improvement.

B.-CAMPUS SCALE

- **General comments**
  - The urban configuration shows an attractive assembly of architectural pieces, free spaces, and trees, predominating environmental conditions of interest and a very positive pedestrianity
  - In general, there is an unbalanced polarization of the use of campus spaces, whose center of gravity resides in the place located between the Library and the Aulario
  - It is valued that the exterior spaces of the campus treasure a remarkable value, although they are not properly used; this interest derives from its potential use for teaching, relationship or rest functions
  - The central pedestrian axis that links the Library and the Rectorate is not adequately enjoyed as a space for relationship, study or stay
  - Although there are some testimonies at present, which are positively valued by the various groups, the presence of works of art on campus should be increased, as they provide an overlapping training resource
  - The groups consulted, especially the students, miss having adequate urban furniture, which induces a greater enjoyment of outdoor spaces

- **Strategic plans and actions**
  - The UPNA could optimize the potential of the large central axis of the campus, so that it functions more effectively as a place of meeting, relationship, experience and study
  - It would also be advisable to integrate the banks of the Sadar River, for its landscape and experiential value
  - Globally, the UPNA would see its evolution improved if it undertook the elaboration of a Campus Master Plan, for which it is suggested to use the

theoretical-practical tool of the "Educational Campus" and improve sustainability in its various meanings.

C.-BUILDING SCALE

- **General comments**
    - A common opinion expressed by the groups consulted is that the buildings of the UPNA do not adequately make their spaces profitable, there are few places of relationship with adequate furniture
    - The Library is an exceptional case on campus, depending on its position in the whole, its dimensions and the typological solution of its internal spaces.
    - Spaces of relationship (corridors, halls) are partially present in the Aulario, as well as in the Sario building, located on the periphery of the campus
    - Due to the type of spatial composition (modular and repetitive) within the main buildings of the campus, situations of disorientation frequently occur in the face of its use by the university community, and very singularly by visiting groups.
- **Strategic plans and actions**
    - As a general recommendation, the UPNA should undertake a planning aimed at increasing interior spaces, properly furnished, that induce students to feel interested in staying longer on campus
    - The UPNA could consider the introduction of added compositional resources (such as the use of color) that help the orientation and differentiation of repetitive spaces
    - An effective strategy to mitigate the current difficulties of use would be to study the implementation of a color code superimposed on the interior plans of the campus buildings
    - As a universal strategy, the UPNA should seek a homogenization of the furniture that can be installed in spaces of social relationship, such as halls or corridors; as a singular case, the UPNA must continue the action already initiated to transform internal spaces in the Library building

D.-CLASSROOM SCALE

- **General comments**
    - The classroom spaces of the UPNA buildings reflect, in general, a considerable uniformity in their configuration, predominating the classrooms of geometrically rectangular plan and moderate free height
    - The general furniture used is remarkably uniform

- There is an excessive number of classrooms that show a lack of internal flexibility, but there have been recent spatial requalification actions, highlighting in that sense notable examples such as the Healthy Gela and the Classroom 026bis

- **Strategic plans and actions**
  - The UPNA must persevere in the progressive transformation of existing classrooms, in line with the actions already initiated
  - To enrich quantitatively and qualitatively the classroom spaces, the UPNA, the UPNA should elaborate a study that collects a taxonomy of innovative modalities of Learning & Teaching, reflecting the spatial typologies associated in each case, and its application in classrooms
  - Likewise, it would be advisable to undertake an organization of classrooms, so that a maximum ratio of students / teacher is not exceeded.
  - As an effective strategy, the UPNA should carry out training so that teachers increase the innovative profile in their work
  - It would be desirable to move towards a certain homogenization in the typologies of internal furniture in the classrooms
  - A study must be carried out in parallel to provide the UPNA Campus with classroom spaces where research activities are carried out
  - The UPNA has the Higher Center for Educational Innovation, which is called to provide criteria for qualitative transformation for classrooms, in terms of spatial innovation associated with education

1. Introduction

The present Intellectual Output (O2) of the LTSHE Erasmus+ Project is centered in the Learning&Teaching spaces at the Universidad Pública de Navarra (UPNA), of Spain. The contents cover both the existing spaces, as well as needs and potential plans for the next future

1.1 The UPNA spaces: a present overview at its four scales

As a first approach to the current situation of the physical spaces at the Universidad Pública de Navarra (UPNA), next, a simple description of some examples is presented.

It consists just in a synthetic overview of some situations, illustrated with photographic documentation, and some basic notes on them.

As shall become evident throughout the present document, both the analysis and the recommendations regarding innovation in Learning&Teaching spaces are related to the four basic physical scales:

A.-City Scale
B.-Campus Scale
C.-Building Scale
D.-Classroom Scale

Respecting that simple classification, no matter which content is described, everything related to the UPNA physical layout can be properly structured in the aforementioned four scales. Such simple methodology facilitates all the understanding of every issue studied in the document.

Thus, next a basic descriptive section is developed. It merely consists in an illustrated itinerary through the four scales of the university, choosing some interesting examples of physical spaces that today exist in the UPNA global reality.

A.-City Scale

A.1.-Introduction.

The relation university-city, centered in the Arrosadía Campus of the UPNA shows two main situations subject to be remarked: first, the physical synergies.
Those consist of the existence of areas of transition between the limits of the UPNA Arrosadía Campus and the surrounding urban zones of the city of Pamplona.
It must be noted that since the foundation of the HE Institution, back in 1987, and the construction of the campus, the city has experienced a sound growth in the surrounding zones.

A.2.-Photographic report

Universidad Pública de Navarra UPNA
Campus location - City context

Universidad Pública de Navarra UPNA
Campus urban context

Universidad Pública de Navarra UPNA
Campus urban context – Sario building

Universidad Pública de Navarra UPNA
Campus urban context – Main access from the city

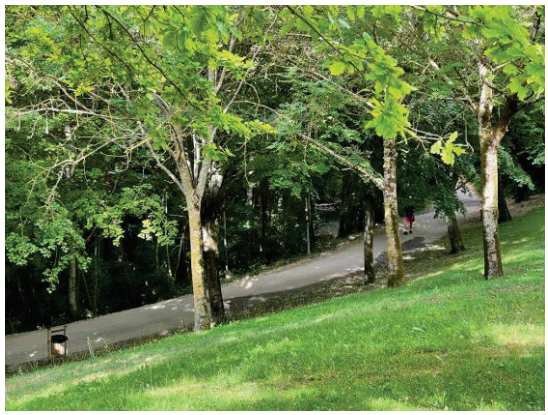
B.-Campus Scale

B.1.-Introduction.

The Arrosadía Campus, which is the most important one of the UPNA (besides other seats in Pamplona and the Tudela Campus) is composed by an interesting combination of built architectural pieces and nature. The whole complex is pedestrian, which benefits the global human scale.
The urbanistic structure shows a central configuration pattern, whose main element is an axis which connects the Rectorate building and the Library. The South border of the Campus meets the Sadar riverbank. The complex includes a relevant variety of open spaces, vegetation and pieces of Art.

B.2.-Photographic report

Universidad Pública de Navarra UPNA
Campus – Aerial view



Universidad Pública de Navarra UPNA
Campus – Open spaces - Sadar riverbank

Universidad Pública de Navarra UPNA
Campus – Central pedestrian axis and Library

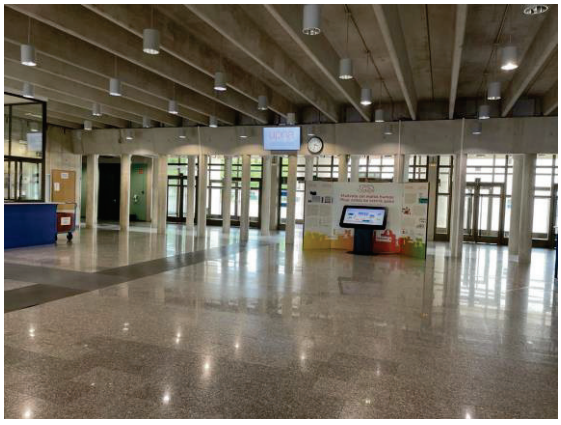
Universidad Pública de Navarra UPNA
Campus – Central pedestrian areas - Art

C.-Building Scale

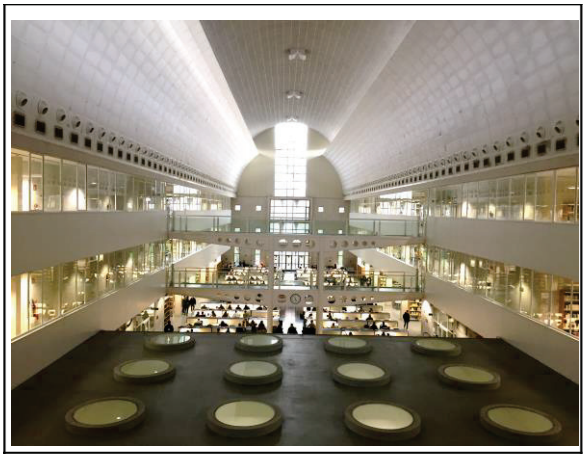
C.1.-Introduction.

Globally analyzed, the UPNA Arrosadía Campus presents quite a homogeneous architectural language in the composition of its several elements. Such homogeneity derives from the fact that it was designed at once by the local architect Francisco Javier Sáenz de Oíza, when the institution was founded. Internally, there is quite a uniform display of modular spaces, composed by Learning&Teaching units, halls and corridors, amongst other elements of smaller entity. The Aulario building is quite representative of such pattern.
Within the global urbanistic scheme, the Library stand out as an iconic architectural piece, with an internal space characterized by its monumentality. Most buildings follow a repetitive rhythm in their design.

C.2.-Photographic report

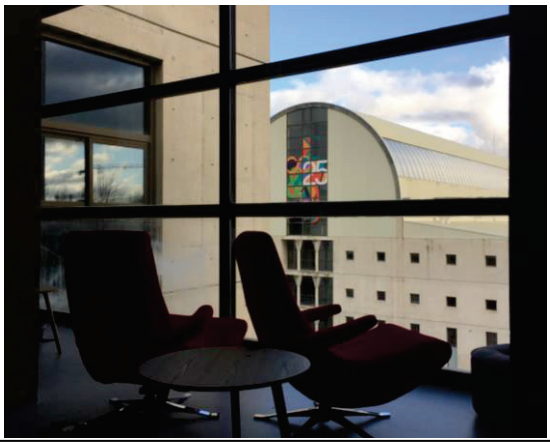


Universidad Pública de Navarra UPNA
Buildings – Aulario main hall



Universidad Pública de Navarra UPNA
Buildings – Library

Universidad Pública de Navarra UPNA
Buildings – Las Encinas – corner space



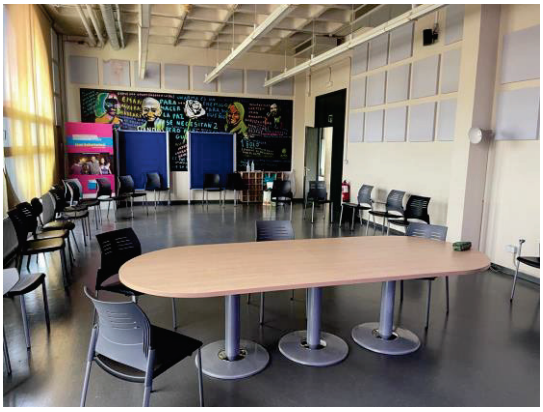
Universidad Pública de Navarra UPNA
Buildings – Aulario – Corner space

D.-Classroom Scale

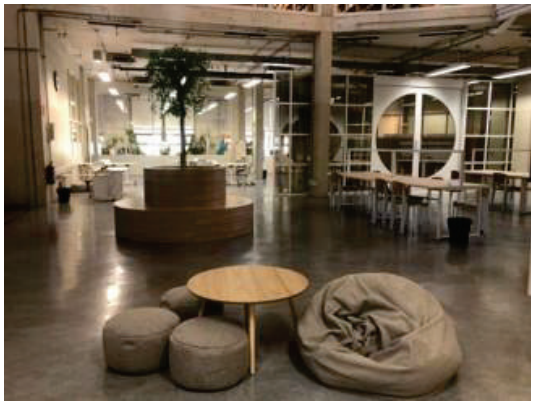
D.1.-Introduction.

The classrooms of the UPNA at its Arrosadía Campus currently show a situation which presents two different aspects.
On one side, traditional settings, with classrooms showing rectangular plants, average furniture, opacity and some rigid display, as a general feature, which make flexibility difficult to achieve. On the other, quite a recent trend in implementing classrooms spaces characterized by their flexibility, together with the use of innovative furniture and some committed treatment of the vertical internal planes. Some of them (such as the Gela Saludable) are located in the Aulario building. Besides, there are unique L&T spaces, such as the Audiovisual Classroom. In the specific case of the Library, some modern new areas are being created, as to foster group working, entrepreneurship and innovative L&T modalities.

D.2.-Photographic report



Universidad Pública de Navarra UPNA
Classrooms – Aulario – Gela Saludable



Universidad Pública de Navarra UPNA
Classrooms – Library – New L&T spaces

Universidad Pública de Navarra UPNA
Classrooms – Library – New L&T spaces

Universidad Pública de Navarra UPNA
Classrooms – Audiovisual L&T space

1.2 Aims and objectives of Intellectual Output 2 of the LTSHE project

The present document provides a look into physical Learning&Teaching spaces, at the four basic scales which were defined from the beginning of the research activities: city, campus, building and classroom.

First, a research process was carried out in order to enrich the theoretical background of the Project. Next, specific questionnaires were designed.

The basic objectives of Intellectual Output 2 of the LTSHE project have been the following ones

1.-Identify positive cases of Learning&Teaching spaces at the UPNA Campus

2.-Identify problems related to the lack of Learning&Teaching spaces at the UPNA Campus

3.-Receive information and suggestions from the different members of the university community regarding future plans and actions addressed to enrich the Learning&Teaching spaces at the UPNA Campus

1.3 Actions implemented for the development of Intellectual Output 2 of the LTSHE project

The LTSHE Project Research Team organized a series of interviews with 3 focus groups at UPNA: students, faculty and managers. Those questionnaires for the interviews for the different groups were composed of two parts:

1) Existing learning and teaching spaces at the university
2) Future/intended learning and teaching spaces at the university

In the case of UPNA, both parts have been integrated, as currently, there is a certain lack of Learning&Teaching spaces in terms of innovation.

During the sessions celebrated at UPNA, the following methodology was carried out by the UPNA team.

1) Presentation of a short conference (in PowerPoint format) that was designed specifically for the goals of the Erasmus+ Project (10 minutes). The conference was centered in theoretical issues about Learning&Teaching spaces, together with examples of excellence taken from the international university scenario
2) The contents of the sessions were classified in 4 physical scales, regarding all the possible Learning&Teaching spaces:
    a. City Scale
    b. Campus Scale
    c. Building Scale
    d. Classroom Scale

2. Theoretical background

2.1.-Theoretical fundamentals in the field of Learning&Teaching

Basic principles of the human formation

Human formation can be regarded as an emotional, collective, sustained and, ultimately, spatial event. Firstly, it has a sound affective component. Any professors committed with his vocation should set up a positively emotional connection with their students, regardless the always-needed academic rigor (Dweck, 1986). As to individuality *versus* collectivity, it must be borne in mind that the amount of knowledge that a group is capable of acquiring and generating outstrips each individual's private store.

Coexistence stimulates growth, and carries educational value in its own right. Human relation can be assumed as both the cause and outcome of human contact: it stimulates growth, and carries educational values (Castrejón, 1982). This quality is somehow connected to Architecture: *"I use the term architecture in a positive and pragmatic sense, as a creation inseparable from civilized life and the society in which it is manifested. By nature it is collective."* (Rossi, 1980). When learning in groups, students actually benefit from an added enrichment: "*From participation in activities, individuals are able to extend their intellectual capacity as well as provide knowledge to others*" (Lippman, 2010, p.21). Recent studies suggest that stable social context might reduce attrition rates, and help students achieve academic and social aims (Wisely & Jorgensen, 2000). Taking sustainability as a quality to be evolved over time, human formation education should be viewed as a comprehensive process guiding a person's development from childhood to old age; in this sense, "*Lifelong learning*" is a valuable concept.

That education should be an affective, collective and sustained event determines the need of space, as a global container, which host such personal contact. Thus, human formation is as well a spatial event. Focusing, then, on such "*spatial*" quality, it should be noted that Architecture is called upon to play a vital role, because human activity is shaped partly by the built spaces in which it takes place: *"Buildings mould human behavior"* (Arnheim, 1977, p.210). Back to the affective component of human formation, it can have a spatial meaning. Embodiment of a built metaphor of the University's emotional embracement by means of an ordering of the precinct deliberately concerned with its impact on and empathy with the community. The plan, volume, form and texture of the various architectural constituents of a campus must be directed toward fostering the psychological wellbeing of those inhabiting the centre of knowledge.

Actors in the Teaching/Learning processes

Education is developed with the concurrence of different kind of participants, so called "actors". The first ones are the members of the university community, basically teachers and students. Well, their corporeality implies that, when deploying their functions, they are structured in space (and in time), within the architectural spheres that correspond to each situation (conventionally, the classroom). However, the participants do not end there. To these

people who take part in the training, there are other elements involved in the Teaching/Learning activities, and they can be classified according to two main classes, active and inductive.

The “active” actors, worth the redundancy, are those who carry out an academic task directly, through a formal, non-formal or informal procedure. This group would include, in addition to teachers and students, the citizens of the city where the university campus is located, the architectural pieces and valuable urban areas, the works of plastic arts (usually sculptures, paintings and murals), and Nature , understood as a factor in the construction of culture.

The “inducing” actors (elements) would be those capable of indirectly stimulating the referred Teaching/Learning activities. This category includes elements such as furniture, vending machines, unique architectural spaces (especially those initially residual or "inert" that can see this condition mutated), and Nature, in this case accepted without it being its formative-cultural component is necessary.

Besides the precedent classification, it must be remarked that, amongst the variety of actors, students must be taken as the true center of gravity (a principle underlined by the European Higher Education Area)-EHEA (Pinto, & Sales, 2008). A holistic review of the educational evolution would demonstrate that learning is bigger than teaching. That conviction remarks the student-centered learning (SCL). Such innovative paradigm shift implies demands modification of old-fashioned behaviours (Oser, & Baeriswyl, 2001). If students are located at the center of gravity of education, that implies progress, leaving behind an individual conception of knowledge and replacing it with more creative modalities.

University and human relations

After remarking the 4 basic principles of human formation, now it is recommendable to underline that he ultimate mission of Higher Education institutions is the all-embracing education of the human being. "*'Mission' means the essential and at least relatively permanent function of the institution; its ultimate purpose and raison d'être*" (Pulido, 2009, p.47). Universities are devoted to the ethical and professional development of the individual; thus, they must delineate each and every one of its features on the basis of its values. The Greek philosopher Plato viewed education as a means to make of the student of today the citizen of tomorrow, and this vision retains its full vigor nowadays: “*Martha Nussbaum points out that the aspiration that the strongest goal of a university is the production of better citizens is an uninterrupted thread throughout the entire history of Higher Education*” (Harpur, 2006, p.139). All over the world universities are in the midst of change, and a there is a clearly perceptible need to forge a new commitment to the community. The so-called "*Third Mission*" becomes transcendental. The design of university areas must try to balance the quantitative dimension (number of people) and the quality of the space where they meet.

It is nothing other than the revival of the historical awareness of the role of educational institutions in their social and urban contexts, but can acquire today specific added values, such as sustainability (Trenche, Yarime, McCormick, Doll, & Kraines, 2014). Modern universities embody the stage on which the shaping of the human being is enacted, and in this process close ties must be nurtured with the social and urban context. To keep the two apart would be self-contradictory. Individuals enhance their social integration to the extent that they are personally capable of optimizing their complement of values. Educate to live in the community; live in the

community to teach and learn. If they interact, people can understand themselves better, reinforcing their personal and social identity (Tharp, & Gllimore, 1997).

As human formation is a spatial event, interaction takes place in a physical setting. Consequently, Architecture becomes a critical component, as it frames and induces the necessary contact that underpins the exhaustive construction of social relations. All spaces designed to host academic activities must be composed under the consciousness that their quality is directly linked to the one of Teaching/Learning processes. Expressing it with other words: good Architecture fosters good universities.

Innovative modalities of Teaching/Learning

Once it is assumed that learning must be centered in students (SCL), and according to recent research projects, it is feasible to define a list of innovative pedagogical patterns whose implementation in university spaces can enriching. One of the essences of the universities through History is the educational practice, which has been undertaken in a multiple typologies. Across the different periods, the rise of diverse understandings of how the transmission of knowledge should be has left a broad legacy of options, which can be recruited nonetheless to the demands of the present. Consequently, it is worthy to generate a simple but rich enough classification of the teaching and learning modalities now available to all universities, for the performance of their key mission (Campos, 2011)

The roles of ICT´s

The humanistic dimension of learning ought to be viewed primarily from the perspective of face-to-face, physical interaction. That education should be an emotional, collective, sustained and spatial carries beneficial consequences. The direct relationships forged among the members of a community go beyond merely contextual circumstances. Proximity among the actors involved in the learning process is by no means a neutral incident of the shaping of an individual: it becomes a decisive factor in the growth of his or her knowledge and values. For these reasons, as against the risks intrinsic to the so-called "*virtual campus*", the education of the whole human being is a spatial act.

Once this principle has been properly remarked, it is coherent with the implementation of the "*Information and Communications Technology-ICT´s"*), which acting always as complementary actors in the Teaching/Learning processes, they can facilitate some activities: activation of spaces (using *wi-fi* and internet accessibility, providing added contents through mobile devices, facilitating educational activities online, as during the COVID-19 confinement, or helping communication, in general). But there is a risk if an abuse of the "*virtual campus*" occurs: "*Then came the development of audiovisual techniques and an explosion of communication systems that caused a crisis in the true concept of the University, and its validity as a defined place equipped for Education"* (Coppola, & Mandolesi, 1997, p.5).

Such crisis becomes a true threat to the comprehensive excellence of university mission, especially detrimental to the human component. Online education can never truly replace personal interaction. Nevertheless, it is fair to recognize the advances that ICT´s have brought to learning, and it is positive that they continue contributing, since it would be unthinkable to suppress them from the social dynamics.

Keys to educational-spatial innovation

Higher Education must carry out the superior mission of providing an integral formation for the human being, building up a future committed citizen, professionally prepared to develop his social activity. This is the reason why a special emphasis on the proper arrangement of the physical spaces in which this sublime enterprise has to take place should be made. When analyzing Learning/Teaching processes and spaces, it becomes critical to understand that there is in fact a solid connection between innovation in education and Innovation in Architecture. The starting point to activate positive keys in the duality Education-Architecture is planning. In the last decades, several studies have been published in this matter: besides the classical ones De Carlo, 1968), (Birks, 1972), (Rebecchini, 1981), some recent ones (Den Heijer, 2011), (Kramer, 2010), (Hertzberger, 2008), together with well-known Publications by the North American architect Richard Dober (Dober, 1996), or the works of Boys and Fraser, which connect the architectural, educational and planning dimensions (Boys, 2011), (Fraser, 2014), (Oblinger, & Lippincott, 2006).

Educational-spatial innovation becomes of special relevance in creative careers. Place is a critical concept regarding teaching innovation, becoming specifically evident in dynamics of pedagogical *Avant-garde* in some disciplines which foster creativity. Those reach high levels in the pedagogies used for the training of future professionals in areas of applied creativity, as in the case of fusions between Architecture, Fashion and Art (Luceño, 2018). The added benefits of such a fusion can be extrapolated to different areas of Knowledge, in order to foster university innovation.

2.2.-Theoretical fundamentals in the urbanistic-architectural matter

Basic principles in university seats: spaces versus places

Universities build their physical settings as necessary containers to host all the Teaching/Learning activities carried out inside them: *"The transmission of knowledge and memory have their first space in the brain, but, over time, have also demanded an actual place for Knowledge"* (Navascués, 1993, p.13). But such a constructive activity must be planned and performed keeping in mind that when dealing with the Architecture of human formation, it is unavoidable to distinguish mere "*spaces*" from "*places*" (Yuan, 1997). "*Space*" only circumscribes to the quantitative configuration. "*Place"* goes beyond, as it adds a transcendental human component: it involves the locations used by people, generating a sort of identity, emerging as a consequence a domain of human use (Doorley, & Witthoft, 2012). When planning, universities must bear in mind how important it is to create real "*places*" for the academic community, as those possess the power of awakening emotions: "*Architectural quality for me can only come about because I am moved by a building"* (Zumthor, 2006, p.10).

Higher Education must be internalized as a type of human interaction, which has to be necessarily induced within Architecture. The assembly of Architecture and human contact is the best way to transform inert "*spaces"* into active "*places*", where faculty and students can crystallize their "*sense of belonging*" to their institution. Recent studies point out that IQ accounts in a reduced portion of career success: just 4% - 10% (Pink, 2005). Consequently, a question arises: what factors account for successful student learning? The possible answers to that include factors such as curiosity, feeling of wellness, visual, psychological and environmental comforts, positive perception of shape, etc. All have then to be born in mind before starting the formal design of university "*spaces*", in order to transform them into "*places*". Under such a principle, the urbanistic-architectural dimension is not just in charge of hosting academic activities, but inducing innovation, fostering social interaction, promoting identity (Romañá, 2004). But it can also assume a transcendental role: transmitting values (aesthetics, proportion, sensorial quality, etc.): *"The curriculum embedded in any building instructs as fully and powerfully as any course taught it in it."* (Orr, 2002).

Transversal innovation: the four scales of modernization in University spaces

The contents of the present report are divided in 4 basic scales: city, campus, building and classroom. They refer to the different physical dimensions that universities normally use in their academic activities.

1.-City

General definition.-This scale affects the physical relation between the university precincts and the correspondent urban environment (other buildings and Heritage pieces, open areas, infrastructures, streets and squares, amongst other elements). This relation is particularly critical within Spanish and the European scenario, as History shows the long tradition of connection between both entities, together with the fact that the EHEA fosters the University Third Mission

Features.-Cities are the most common context where university precincts are located (Bender, 1988). This circumstance constitutes the sign of identity of the European tradition, since the creation of the first institutions of Higher Education in the Middle Age. Although after World War II a process of displacement of new campuses to the periphery of urban areas occurred, it is unquestionable that still nowadays the cores of cities play a relevant role as centers of gravity of universities: "*The already unanimous and generalized rejection of a university isolated from its context*" (Rebecchini, 1981, p.5). The city, in turn, identifies with its university (Frijhoff, 1986). This circumstance offers outstanding opportunities for the activation of synergies between university and city, in several planes: educational, social, cultural, economical and urbanistic-architectural. In fact, cities become nowadays a transcendental source for Teaching/Learning.

2.-Campus

General definition. This scale relates to the university precinct, as a complex with enough dimension and differentiation in relation to the context (urban or natural). A campus consists in a global unified complex, composed by built volumes and open spaces (where Nature and Art have to play a key role). Both complementary inert areas and corners can be activated as new learning "*places*", where education could be hosted.

Features.-As a heritage of the American tradition, a campus embodies the most common university seat in the international scenario. Amongst the numerous definitions it has had through History, one of the simplest was the stated in 1925 by the German urban planner Werner Hegemann: "*A piece of land that is covered with the buildings of an American university*" (Hegemann, 1925, p.87). Overall, it must be remarked that the term "campus" refers originally just to the American model, although nowadays it is broadly used to name any university complex. But such a specific word should always be related to the authentic profile it acquired from the XVII on as an urbanistic reality with hosts all the functions necessary to develop a community of learning and life (Coppola, & Mandolesi, 1997), (Turner, 1984), (French, & Kennedy, 2015). A contemporary definition of a campus could be the one stated by professor Pié: "*The campus could be the physical place where the university activity is carried out, but also a relationship space that generates knowledge and specificity*" (Pié, 2004, p.17).

3.-Building

General definition.-This scale corresponds to the architectural piece, as an independent unit. Inside its membranes, the areas dedicated to host educational activities must be conceived under the principle of becoming active sites for alternative Teaching/Learning modalities. Pieces of Architecture can activate plenty of innovative "*places"*; amongst other strategies, they can host works of Art or cultural elements that enrich the capacity of the building to increase Knowledge.

Features.-If there is a spatial object, which embodies with more intensity the outcomes of a sound design process that likely would be the building. Regardless its physical dimensions, an architectural piece has the capacity of hosting a large series of spaces, addressed to foster the different academic university functions: teaching, learning, social meeting, services, restoration, research, etc. Due to its neat corporeity, an architectural piece has the capacity of projecting visually most of the values of the institution. Such an "educational" dimension has induced some

authors to brand buildings conceived under the principle of excellence as "*three-dimensional textbooks*" (Kong, Yaacob, & Ariffin, 2015).

4.-Classroom

General definition.-This scale refers to the minimum pedagogical cell, which is normally located inside university buildings. Besides the typical magister lecture room, there are many other different types of "*educational cells*" that can be designed and implemented, in order to enrich the variety of the academic activities. It is needed to reflect upon the spatial configuration of alternative classrooms, and the way that furniture inside them can be arranged. The consequence will be the emergence of multiple learning innovative "*places*", in contrast with the traditional ones.

Features.-As the essential Teaching/Learning space, classrooms are subject to be designed under a committed intention of innovation (Byers Imms, & Hartnell-Young, 2018). As they are the areas where students and faculty spend most of their time while at campus, it becomes of high relevance to design them with special sensitiveness, because they will undoubtedly generate psychological impacts in the users. This line of research was very fruitful in the Sixties and Seventies of the last century, by authors with recognized careers (Canter, 1978), (Sommer, 1974), (Proshansky, 1976). When composing classrooms, attention must be paid to features such as: typology in plan, colour, texture, natural and artificial Light, openness or closeness, transparency (visual or phenomenological) and floor arrangement; as well as the participation of complementary elements, like furniture or technological devices.

University and context

Universities are located in specific areas. As a first consideration at this point, it must be mentioned that a good physical university body must be rooted in its place (geographical, cultural, social and urbanistic-architectural. The need for these links between the university and its proper context has been defended from various conceptual perspectives: "*No institution, regardless of whether it is an educational establishment or a professional body, can be significantly considered if it is divorced from its context, in the political and organizational structure of its country*" (Chaabane, & Mouss, 1998, p.84). Thus, the interference of foreign styles improperly understood should be avoided, in particular those whose origin, essence or formal display would not fit in with local cultures. The ideation or transformation of a university complex must be the outcome of a deep analysis of the circumstances of all kinds that converge in each scenario. This should not be understood at all as an obligatory submission to determinism, but it must be acted firmly to avoid frivolity as a guideline.

Typologies of university spaces: internal shapes and limits

Any university space has a formal definition. This affects essentially the composition typology in plan, as well as other tangible aspects, such as volume, light, colour, texture or others. Under a geometric approach, it is feasible to draw a simple classification of patterns in plan, regular or irregular.

Regular geometrical patterns in plan: rectangle, square, circle, ellipse, triangle, "L-shape", or simple combinations of some of them

Irregular geometrical patterns in plan: organic shapes, with curves or complex combinations of regular geometries

Amongst the diverse elements that participate in the configuration of university spaces, there is one especially relevant: the limit. The first approach is to understand it as a traditional partition or wall (Carpenter, & McLuhan, 1974).). But taking it in a more conceptual manner, it can be opaque, translucent, or transparent (in a visual or phenomenological meaning), and it can be configured with the implementation of diverse types of openings (windows, doors, in their diverse formats). In relation to the issue of transparency, qualify that it can be visual and experiential, affecting the possibility of cross-sectional experimentation of various spaces with diverse psychological impacts (Rowe, & Slutzky, 1963). The dissolution of the limit (in time and space) of traditional university seats also involves creativity. Professor Csíkszentmihály stated about creative people that: "*…when they are focused on what they do, there is great joy and self-confidence that comes from expanding the boundaries of a domain*" (Csíkszentmihály, 1995, p.12). Nowadays, it becomes progressively indubitable that innovation in Teaching/Learning affects implies a new approach to the concept of limit, advancing towards a dissolution that brings as a benefit the activation of alternative "*places*" and times: "*Under the new learning paradigm, we are looking at a model where different students (of varying ages),learn different things from different people in different places in different ways and at different times*" (Nair, & Fielding, 2005, p.19).

To all this reflection on the concept of limit, as an entity that conditions the opening of a university seat towards its context, some more philosophical vision can be incorporated: " *The link between the external and the internal, including the limit, consisted of communication. Conversely, it could be said that communication was born through the limit* " (Ito, 2006, p.20).

University spaces and complements

Learning/Teaching spaces in universities have physical bodies, which can adopt diverse typologies in terms of form, and can be modified if conceived under a recommendable strategy of flexibility (Wall, 2016). Education has its own pedagogical procedures and should have coherent shapes associated (Campos, & Luceño, 2018). Besides the essential built framework of an academic space, there are complementary elements, which join the nucleus of the architectural body. They play an active role in the diverse educational modalities. That would be the case of furniture (indoor or outdoor), technological devices (screens, projectors, computers, etc), together with more traditional ones, such as blackboards or bookstores (if they are located inside classrooms). In regard to innovative Teaching/Learning strategies, some elements can join the central university spaces as well. That would be the case of works of Art, natural components (plants, vegetation, trees, etc) or pieces of heritage that have a cultural value.

Synergies in university spaces

Any space addressed to host or foster educational activities must be understood as a physical entity that can transcend its strict physical limits. Following such a principle, and assuming the benefits of the dissolution of the limits of traditional locations, the academic activities can interact with ambits situated in certain proximity (inside or outside the building walls).

In the case of a campus, the synergies have an outstanding field of activation: the social and urban context provided by the adjacent city.

Synergies between university and city can be both physical and functional. The first ones relate to the direct connection between internal university areas and urban areas situated in the nearby environment (streets, squares, parks or general equipment). The functional synergies present a larger dimension. They could be classified into two typologies: affiliations and participations. In the former, the Higher Education institution only joins externally to the activities housed in these facilities, nonetheless promoting those same activities carried out in them (museums, civic and cultural centres, libraries, artistic events, attendance to theater plays, etc.); in the latter, the university inserts its own use in those facilities that belong to the municipal sphere (such as distant open spaces, parks, unique pieces of heritage, fairgrounds, sports facilities and, in general, any place where the educational institution can carry out its own academic activities). One of the elements with the greatest pedagogical potential is museums, which is why its links with the university have led to specific studies (Riquelme-Quiñonero *et.al.*, 2019).

3. Methodology

3.1. Global description of the methodological approach

In the present section of the document elaborated at the Universidad Pública de Navarra (UPNA) the methodology applied is explained.

The methodology used was structured through a set of surveys oriented to the three basic focus groups selected for the L&T Research Project: students, faculty and managers. In all the cases, the questions were broken down into four basic scales already mentioned: city, campus, building and classroom (it is in the latter where the study presented here was focused).

Although some logical differences were introduced in the three groups, the structure of the questionnaire was basically similar. That strategy facilitates the reading of conclusions and outcomes.

The dynamic used was based in the organization of several presential meetings. In each of those meetings, the methodology used was quite similar, no matter if the group was of students, faculty or managers

First.-A presentation to introduce the main topics to evaluate

Second.-A discussion and idea sharing session structured around the diverse questions, as defined in each questionnaire

Third.-Elaboration of a summary of the basic conclusions and outcomes

The different questionnaires were structured in the following manner:

- 4 basic scales: city, campus, building, classroom
- In each of those, these topics
    - **Functional dimension**
    - **Academic dimension**
    - **Perceptual and experiential dimension**

3.2 Research questionnaires

For the development of the questionnaires, and the associated discussion and outcomes regarding the main topic of L&T physical spaces, the following set of questions was designed:

(*NOTE: depending on the Group, the enunciation of some questions was slightly modified, as to match correctly with the addressees*)

A.-CITY SCALE

A.1.-Functional dimension

1.-Is there a space in the city, off campus, where you carry out training activities?

2.-Are they spaces located in urban areas near the campus, or away from it?

3.-Do you have an adequate wi-fi network for these training activities?

A.2.-Academic dimension

4.-Are they individual or collective activities?

5.-Do only students participate, or also a teacher?

6.-Does this type of space encourage the realization of innovative training modalities?

7.-Do you consider that this type of spaces in the city are very useful in your training process?

A.3.-Perceptual and experiential dimension

8.-Do you value the presence of these spaces in the city as a factor that enriches the reality of the university?

9.-Do you consider that the university is more motivating for your training activities by having these spaces in the city?

B.-CAMPUS SCALE

B.1.-Functional dimension

1.-Is there an outdoor space on campus where you carry out training activities?

2.-Are they spaces located in central areas of the campus or in peripheral areas?

3.-Do you have any type of urban furniture (benches, pergolas, tables, etc.), conventional or singular?

4.-Do you have an adequate wi-fi network for these training activities?

5.-Do you enjoy the appropriate levels of tranquillity (environmental noise, traffic of people, noise pollution of vehicles, etc.)?

6.-Do you consider that the size of these spaces is large, or small?

7.-Is the horizontal plane (ground) flat or irregular?

8.-Are there other unique spaces of the university where you carry out training activities (outside the central scope of the campus, such as research centers, residences, practice farms, sports facilities, or others)?

B.2.-Academic dimension

9.-Are they individual or collective activities?

10.-Do only students participate, or also a teacher?

11.-Does this type of space encourage the realization of innovative training modalities?

12.-Do you consider that this type of outdoor spaces is very useful in your training process?

B.3.-Perceptual and experiential dimension

13.-Do you enjoy from these spaces extensive or panoramic views of the campus or the outside environment?

14.-Do you enjoy adequate lighting, natural or artificial, or shade, in these spaces?

15.-Are there natural elements (trees, plants, etc.) in these spaces?

16.-Do you feel that these spaces are welcoming?

17.-Do you value the presence of these spaces as a factor that enriches the reality of the campus?

18.-Do you consider that the campus is more motivating for your training activities by having these outdoor spaces?

C.-BUILDING SCALE

C.1.-Functional dimension

1.-Is there any interior space in the campus buildings (corridors, halls, etc.) where you carry out training activities?

2.-Are they spaces located in central areas of buildings or in peripheral areas?

3.-Do you have any type of furniture (benches, chairs, sofas, tables, etc.), conventional or unique?

4.-Do you have an adequate wi-fi network for these training activities?

5.-Do you enjoy the appropriate levels of tranquillity (environmental noise, traffic of people, etc.)?

6.-Do you consider that the size of these spaces is large, or small?

7.-Is the horizontal plane (ground) flat or irregular?

C.2.-Academic dimension

8.-Are they individual or collective activities?

9.-Do only students participate, or also a teacher?

10.-Does this type of space encourage the realization of innovative training modalities?

11.-Do you consider that this type of spaces is very useful in your training process?

C.3.-Perceptual and experiential dimension

12.-Do you enjoy from these spaces extensive or panoramic views of the campus or the outside environment?

13.-Do you enjoy adequate lighting, natural or artificial, or shade, in these spaces?

14.-Do you feel that these spaces are welcoming?

15.-Are there natural elements (trees, plants, etc.) in these spaces?

16.-Do these spaces have unique colors in their configuration, or do they use the usual neutral tones?

17.-Do you value the presence of these spaces as a factor that enriches the reality of the buildings?

18.-Do you consider that buildings are more motivating for your training activities by having these interior spaces to buildings?

D.-CLASSROOM SCALE

D.1.-Functional dimension

1.-Are there innovative classrooms on your campus where you carry out training activities?

2.-Do you have any type of unique furniture (different from the usual chairs, tables, etc.)?

3.-Do you have an adequate wi-fi network for these training activities?

4.-Do you enjoy the appropriate levels of tranquillity (environmental noise, traffic of people, etc.)?

5.-Are the walls of these innovative classrooms opaque or transparent?

6.-Do you consider that the size of these classrooms is large, or small?

7.-Is the horizontal plane (ground) flat or irregular?

8.-Do you use unique spaces in the library for training activities?

9.-Do you use unique spaces of other buildings for training activities (other than classrooms or buildings that house conventional teaching spaces, such as research centers, residences, sports facilities, or others)?

D.2.-Academic dimension

10.-Are they individual or collective activities?

11.-Do only students participate, or also a teacher?

12.-Does this type of classroom encourage the realization of innovative training modalities?

13.-Do you consider that this type of innovative classrooms is very useful in your training process?

D.3.-Perceptual and experiential dimension

14.-Do you enjoy from these classrooms extensive or panoramic views of the building, the campus or the outside environment?

15.-Do you enjoy adequate lighting, natural or artificial, or shade, in these classrooms?

16.-Are there natural elements (trees, plants, etc.) in these classrooms?

17.-Do you feel that these classrooms are welcoming?

18.-Do these classrooms have unique colors in their configuration, or do they use the usual neutral tones?

19.-Do you value the presence of these innovative classrooms as a factor that enriches the reality of the campus?

20.-Do you consider that the campus is more motivating for your training activities by having these innovative classrooms?

3.3 Data collection and analysis

Once the diverse questionnaires were designed, the UPNA Team which has been developing all the research activities associated to the LTSHE Erasmus+ Project organized a series of meetings with different groups, all of them belonging to the community of the Universidad Pública de Navarra (UPNA).
To achieve the main goals and proceed to the data collection and analysis, several interviews were conducted. Those corresponded to the three basic groups which were selected for the realization of the research tasks associated to the LTSHE Erasmus+ Project. The three groups were the following ones:

A.-Students
B.-Faculty
C.-Managers

Next, a simple description of their characteristics is expressed:

A.-Students: undergraduate and graduate students of UPNA, belonging to different Faculties and areas of knowledge.

B.-Faculty: a group of professors currently working at UPNA, belonging to different Faculties and areas of knowledge. As a special case, a professor with visual impairment was interviewed as well.

C.-Managers: some professionals working at UPNA, dedicated to tasks such as members of the Rector Team, office of infrastructures, or other internal management sections

During several weeks, a series of meetings and working sessions were organized. In each of them, the following methodology was used:

- First: an introduction to the main characteristics of the LTSHE Erasmus+ project
- Second: a short presentation of innovation in L&T physical spaces, including the following issues
- Third: delivery and explanation of Questionnaire
- Fourth: discussion and data collection of all the opinions and data pointed out by the participants
- Fifth: a final data collection and analysis. The outcome of such activity was finally translated into basic conclusions and recommendations, after incorporating in parallel issues learnt in the research preliminary process, as well as through the deep on-site analysis of the L&T spaces at the UPNA campus

The following tables synthesize the activities carried out in the different sessions, with the participation of the three Focus Groups: Students, Faculty and Managers

Table 1 | Contents of data collection sessions at UPNA – Focus group: students

No.	Action	Responsible	Focus Group
1	Introduction	UPNA Team	Students
2	L&T spaces presentation	UPNA Team	Students
3	Questionnaire 1	UPNA Team Students	Students
4	Discussion	UPNA Team Students	Students
5	Data collection	UPNA Team	Students
6	Data analysis and outcomes – students vision	UPNA Team	Students

Table 2 | Contents of data collection sessions at UPNA – Focus group: faculty

No.	Action	Responsible	Focus Group
1	Introduction	UPNA Team	Faculty
2	L&T spaces presentation	UPNA Team	Faculty
3	Questionnaire 2	UPNA Team Faculty	Faculty
4	Discussion	UPNA Team Faculty	Faculty
5	Data collection	UPNA Team	Faculty
6	Data analysis and outcomes – faculty vision	UPNA Team	Faculty

Table 3 | Contents of data collection sessions at UPNA – Focus group: managers

No.	Action	Responsible	Focus Group
1	Introduction	UPNA Team	Managers
2	L&T spaces presentation	UPNA Team	Managers
3	Questionnaire 3	UPNA Team Managers	Managers
4	Discussion	UPNA Team Managers	Managers
5	Data collection	UPNA Team	Managers
6	Data analysis and outcomes – managers vison	UPNA Team	Managers
7	Presentation of outcomes to Rectorate	UPNA Team	

Once the data collection and analysis was carried out by the UPNA Team, some strategies for the future were envisioned and discussed.

Actually, as a consequence of the third series of sessions celebrated (addressed to Focus Group Managers), a formal presentation was organized for the Rectoral Team. In that session, which took place in September 2022, the basic outcomes of the LTSHE Erasmus+ Project were synthesized, remarking the possible consequences they could have for the UPNA, in terms of transformation of L&T spaces towards innovation.

4. Perception and evaluation of L&T spaces by the university community at UPNA

In the present section of the document, the basic information gathered through the methodological research work carried out is presented.

That information covers the perception and evaluation of the Learning&Teaching spaces at the Universidad Pública de Navarra (UPNA) Arrosadía campus in the city of Pamplona. Such perception and evaluation correspond to the three groups which developed the answers to the questionnaires which have been explained before, in the previous sections.

Thus, the present section is structured following the 4 basic scales which organize the whole documents corresponding to the LTSHE Project: city, campus, building and classroom.

4.1 Perception and evaluation of L&T spaces – City scale

The present section is structured in three main epigraphs: students, faculty and managers, as corresponding to the diverse questionnaire sessions carried out along the LTSHE Erasmus+ Project at the UPNA. Once inside, three different contents are considered:

A.-Functional dimension

B.-Academic dimension

C.-Perceptual and experiential dimension

GROUP: STUDENTS

A.-Functional dimension

1.-Is there a space in the city, off campus, where you carry out training activities?

- The assessment of the students on this issue begins with the information that at least half of them have experienced the use of spaces in the city as part of their training activities
- As potentially supplying alternative or innovative training actions, the following facilities outside the UPNA are cited, and located outside the university campus, within the urban fabric: Museum of Navarra; Contemporary Archive; Chamber of Commerce; Parliament of Navarre; as well as some municipal library
- It is also stated that groups of students have carried out curricular practices in entities outside the UPNA, located outside the university campus
- Conversely, the UPNA campus has been the recipient of innovative training activities, carried out by professionals of different types, from entities outside the UPNA.

2.-Are they spaces located in urban areas near the campus, or away from it?

- The spaces where the facilities and entities outside the UPNA are located are physically located outside the campus, within the general urban fabric of Pamplona

3.-Do you have an adequate wi-fi network for these training activities?

- Depending on the nature of the training activities carried out in urban environments, it has not been necessary to have a wi-fi network, except in some specific cases, such as the Chamber of Commerce.

B.-Academic dimension

4.-Are they individual or collective activities?

- The various activities that have been carried out in spaces belonging to entities outside the UJPNA have been both individual and collective

5.-Do only students participate, or also a teacher?

- The training activities have usually had a teacher, who carried out his work as a counsellor of the same
- The exception was the curricular practices, in which UPNA teachers did not participate.

6.-Does this type of space encourage the realization of innovative training modalities?

- The students express that the activities carried out in this type of spaces outside the UPNA campus provide an added training of considerable value, as it provides them with other types of sources and resources that are useful for the understanding of subjects, in an innovative way compared to the usual

7.-Do you consider that this type of spaces in the city are especially useful in your training process?

- The assessment that students make of these experiences carried out outside the environment of the UPNA campus is positive

C.-Perceptual and experiential dimension

8.-Do you value the presence of these spaces in the city as a factor that enriches the reality of the university?

- Students positively value this type of space and the activities associated with them as a factor that enriches the reality of the UPNA

9.-Do you consider that the university is more motivating for your training activities by having these spaces in the city?

- In coherence with the above, the assessment that students make of these experiences carried out in spaces of the city is motivating for their training process

GROUP: FACULTY

A.-Functional dimension

1.-Is there a space in the city, off campus, where you promote training activities?

- The teaching staff values the actions that have been carried out in these years, using spaces in the city as part of their training activities
- The following facilities outside the UPNA are mentioned, located outside the university campus, within the urban fabric: Museum of Navarra and Planetarium, where the Art and Science Festival is held, organized by the UPNA in collaboration with these institutions
- A teacher organized an activity called "Science in the Bar" in the urban context, on a monthly basis; some professors, students (from the 2 universities), and the general public attended
- There is an agreement of the UPNA, but not well used, associated with the Navarra Network of Learning and Service, of a solidarity nature, so that the students are active agents in the city
- It has also made use of the Plaza del Castillo, for Summer Courses
- The training actions associated with service-learning work properly, as they reinforce the academic and spatial synergies between university and city
- There is an innovation project of the Faculty of Legal Sciences, called "CUARDA", linked to the Palace of Navarra, which seeks to understand how events happened in the historical past of the city of Pamplona
- As a specific situation, on the Tudela Campus, some teachers indicate that the UNED has a Palace in the urban center; the UPNA wants to create a headquarters in the center of that city

2.-Are they spaces located in urban areas near the campus, or away from it?

- The professors comment that the presence of the UPNA Campus has contributed to the urban development of the city in its surroundings
- As a specific negative case, it is mentioned that the current parking lot and its slope physically isolate the campus from the urban environment.
- Some teachers have taken walks around the city with students

3.-Do you have an adequate wi-fi network for these training activities?

- Teachers communicate that a wi-fi network is generally available in the entities where activities of this type are carried out

B.-Academic dimension

4.-Are they individual or collective activities, with several teachers and students?

- Teachers indicate as positive the business practices, since they have involved experiences of students, on an individual basis, in spaces outside the campus

5.-Does this type of space in the city allow or encourage you to promote innovative training modalities?

- In general, the teachers consulted comment on the difficulties of transferring students to activities outside the UPNA campus, partly due to the rigidity of their teaching schedules.
- The latter highlights a certain contradiction, in the opinion of several teachers: the intention of flexibility and rigidity implied by the European Higher Education Area (EHEA)

6.-¿Do you consider that this type of spaces in the city are especially useful in the training process of the students?

- The assessment that professors make of these experiences carried out outside the environment of the UPNA campus is positive, although it is broader in Humanities disciplines than in technical degrees
- They express that to increase the benefits derived from the use of these spaces, a certain cultural change would be necessary, so that the reciprocal university-city synergies would be increased.

C.-Perceptual and experiential dimension

7.-Do you value the presence of these spaces in the city as a factor that enriches the reality of the university?

- As part of the enrichment of the university, certain activities are indicated that are carried out in collaboration with Down Syndrome associations for students of Magisterium, on weekends
- Some teachers indicate the valuable initiative of the Social Action Unit of the UPNA "Arreglandoelmundo.org"

8.-Do you consider that the university is more motivating for your training activities by having these spaces in the city?

The professors comment that the city offers a motivating potential for training activities, as a space for learning and also for study and observation for certain types of university activities

It is stressed that the university-city relationship is basic because it serves as a channel for the development of the Third Mission.

Conversely, the UPNA Campus is used by the general population of the environment as a place of recreation or sport, which is positively valued

GROUP: MANAGERS

A.-Functional dimension

1.-Are there spaces in the city, off campus, where the university carries out training activities?

- As a general observation, the managers of the UPNA recall that the presence of the Campus has implied a process of reactivation of urban areas of its surroundings

- That facet was one of the initial considerations, when the process of implementing the enclosure was launched.
- University residences are a remarkably effective instrument to promote interaction with the city
- Certain spaces of entities external to the UPNA are used, such as -Planetarium or Palacio del Condestable, but in general it is considered that there is a lack of areas of mutual linkage; in that sense, it is being considered to enable a place of the UPNA in Las Salesas, to develop university extension activities

  It is expected that the UPNA will be able to adapt the Convent of Las Salesas as the headquarters of certain activities.

  At present, the socio-urban disconnection with the city is suffered, in both directions, which contradicts the sense of public utility; this is a derivative of the primitive decision to locate the enclosure on the periphery

  The UPNA must try to socially rehabilitate areas near the enclosure, as is the case of the neighbourhood of La Milagrosa, implementing some headquarters; in the opposite direction, it can offer the use of facilities and spaces of the Campus for vulnerable groups

2.-Are they spaces located in urban areas near the campus, or away from it?

- In general, they are areas located within the urban fabric of Pamplona, not remarkably close physically
- In the opposite sense to the use of spaces in the city, the UPNA Campus receives the integration of certain groups, by organizing training activities that affect external entities.
- As an added observation, the managers consider that the proximity to the city brings as a consequence that they do not properly crystallize the university community itself, except in the case of groups of students from other locations, such as Erasmus students

B.-Academic dimension

3.-Does this type of space in the city encourage the promotion of innovative training modalities, as a global strategy of the university?

- Those responsible for the management of the UPNA consider that the university presence in the city is positive

4.-Do you consider that this type of spaces in the city is especially useful in the training process of the students?

- It is estimated that, in fact, the use of the resources provided by the city has a positive impact on the training of students

C.-Perceptual and experiential dimension

5.-Do you consider that the university is more motivating for the training activities of the students by having these spaces of the city?

- The managers of the UPNA value positively the existence of these spaces belonging to various entities, as an added resource for the motivation of the students
- The Vice-Rectorate has organized a participation plan for students to get involved in all this

4.2 Perception and evaluation of L&T spaces – Campus scale

The present section is structured in three main epigraphs: students, faculty and managers, as corresponding to the diverse questionnaire sessions carried out along the LTSHE Erasmus+ Project at the UPNA. Once inside, three different contents are considered:

A.-Functional dimension

B.-Academic dimension

C.-Perceptual and experiential dimension

GROUP: STUDENTS

A.-Functional dimension

1.-Is there an outdoor space on campus where you carry out training activities?

- Students estimate that approximately 75% of them use certain outdoor spaces on campus for certain training activities
- Also included in this list of spaces are those linked to the Sario building
- In addition to carrying out activities directly associated with their academic training, students refer to this type of spaces as places of recreation and relaxation

2.-Are they spaces located in central areas of the campus or in peripheral areas?

- The outdoor spaces of the campus used by the students are distributed in the garden areas, as well as in the green sectors near the riverbank of the Sadar River
- The central green axis of the campus is understood as peripheral in nature due to the students' path, given its distance from the Aulario building.

3.-Do you have any type of urban furniture (benches, pergolas, tables, etc.), conventional or singular?

- Normally, they do not have urban furniture, but only use the horizontal support of the floor, resolved as a landscaped green zone
- They only make use of furniture (a bench or table) that is located in the outdoor area of the cafeteria

4.-Do you have an adequate wi-fi network for these training activities?

- In general, they do not need to use it, although they have the entire campus of the EDUROAM network, although its coverage is ideal in various outdoor spaces.

5.-Do you enjoy the appropriate levels of tranquillity (environmental noise, traffic of people, noise pollution of vehicles, etc.)?

- In general, these outdoor places of the campus enjoy quite tranquillity, except for those located in the sectors adjacent to the classroom building.

6.-Do you consider that the size of these spaces is large, or small?

- Students express that this type of space has sufficiently large dimensions
- At the same time, they miss having small-scale areas that allow a more intimate use of the campus.

7.-Is the horizontal plane (ground) flat or irregular?

- Students state that the outdoor spaces of the campus reflect a considerable variety in this aspect of the floor-support.
- They value the presence of natural elements in them

8.-Are there other unique spaces of the university where you carry out training activities (outside the central scope of the campus, such as research centers, residences, practice farms, sports facilities, or others)?

- The students express that they use, in fact, other unique spaces, such as those belonging to the Sario building, or the sports facilities

B.-Academic dimension

9.-Are they individual or collective activities?

- In general, the activities developed by students in this type of outdoor spaces are both collective and individual.
- However, the scarcity of intimate spaces and smaller human scale makes it difficult to individually use these outdoor places on the UPNA campus.

10.-Do only students participate, or also a teacher?

- Practically all the training activities that take place in these spaces are developed by students, without the presence of teachers
- As an exception, the case of the Reading Club is cited, where there is the participation of a teacher

11.-Does this type of space encourage the realization of innovative training modalities?

- With a majority, students value the existence of these outdoor spaces as potential hosts of innovative training processes

12.-Do you consider that this type of outdoor spaces is very useful in your training process?

- Students value positively the existence of these outdoor spaces as places to carry out actions that are useful in their training process

C.-Perceptual and experiential dimension

13.-Do you enjoy from these spaces extensive or panoramic views of the campus or the outside environment?

- The outdoor free spaces of the UPNA campus hardly enjoy extensive perspectives

- As an exception, the large central green linear axis does provide a powerful panorama, although it is limited to the domains of the campus itself.

14.-Do you enjoy adequate lighting, natural or artificial, or shade, in these spaces?

- In general, students express that they have a sufficient level of lighting, especially natural, in these outdoor spaces.
- As a unique situation, the shade provided by the trees provides adequate light levels, when the sunlight is too intense.

15.-Are there natural elements (trees, plants, etc.) in these spaces?

- The outdoor spaces have trees of considerable size
- This powerful natural presence brings a remarkable landscape personality to the campus.
- However, students miss having shades that protect against excessive sunlight or rain.

16.-Do you feel that these spaces are welcoming?

- Students do not consider outdoor spaces welcoming, partly due to the aforementioned absence of shades and adequate street furniture

17.-Do you value the presence of these spaces as a factor that enriches the reality of the campus?

- The outdoor free spaces offer a varied repertoire of plant species, which have a formative potential
- This quality has led to certain training activities associated with the knowledge of these species.
- The campus can be enriched more if the number and quality of these external places is increased, after the proper treatment of them.

18.-Do you consider that the campus is more motivating for your training activities by having these outdoor spaces?

- Students value these areas as spaces for interaction between students from different degrees

GROUP: FACULTY

A.-Functional dimension

1.-Is there an outdoor space on campus where you promote training activities?

- Professors know that outdoor spaces of the campus are used for certain training activities, but mostly for recreation
- Some professors use the spaces of the campus to teach to measure with steps what the green areas measure, etc.; the students end up liking it, because it roots them with the place

2.-Are they spaces located in central areas of the campus or in peripheral areas?

- The outdoor spaces of the campus that are used are distributed in the garden areas, as well as in the green sectors near the Sadar River
- Spaces linked to the Sario building are also used
- The enclave known as "La Plaza", located between the Aulario and the Library, is not properly profitable as a place of interaction
- The central pedestrian axis is considered by the students as the "periphery" of the campus, since the core of its activities is located in the area of the classroom and Library

3.-Do you have any type of urban furniture (benches, pergolas, tables, etc.), conventional or singular?

- Garden green areas are usually used, with existing furniture
- The outdoor tables located next to the cafeteria are frequently used, from the installation of the attached tensile structure (tent)
- Due to its current design, the pieces of urban furniture of the central axis do not invite interaction between the members of the university community

4.-Do you have an adequate wi-fi network for these training activities?

- In general, they have the EDUROAM network throughout the campus

5.-Do you enjoy the appropriate levels of tranquillity (environmental noise, traffic of people, noise pollution of vehicles, etc.)?

- The outdoor places of the campus enjoy, in general, quite quiet

6.-Do you consider that the size of these spaces is large, or small?

- This type of space has sufficiently large dimensions
- It would be desirable to have complementary areas of somewhat more intimate scale

7.-Is the horizontal plane (ground) flat or irregular?

- The exterior spaces of the campus have a mostly flat arrangement in their configuration

8.-Are there other unique spaces of the university where you promote training activities (outside the central scope of the campus, such as research centers, residences, practice farms, sports facilities, or others)?

- Professors value that it would be positive to differentiate buildings by areas of knowledge, as a way to increase visual identity
- Professors state that other unique spaces are used, such as those belonging to the Sario building, or sports facilities

B.-Academic dimension

9.-Are they individual or collective activities, with several teachers and students?

- The activities developed by students in this type of outdoor spaces are both collective and individual
- In some cases, the campus itself is used for added training, and even the land itself for surveying practices.

10.-Does this type of space allow or encourage you to promote innovative training modalities?

- The teaching staff considers that there are currently no necessary outdoor spaces on the campus that invite the stay, or that convene the population from abroad

11.-Do you consider that this type of spaces is very useful in the training process of the students?

- Teachers consider that these spaces are useful to host complementary training actions to the regulated

C.-Perceptual and experiential dimension

12.-Do you enjoy from these spaces extensive or panoramic views of the campus or the outside environment?

- The external areas of the UPNA campus hardly enjoy extensive perspectives, except for the areas linked to the riverbed

13.-Do you enjoy adequate lighting, natural or artificial, or shade, in these spaces?

- The teachers express that these spaces have a sufficient level of lighting, especially natural
- In parallel, it is stressed that the shade provided by the trees provides adequate light levels, in the face of intense sunlight.

14.-Are there natural elements (trees, plants, etc.) in these spaces?

- The outdoor spaces that are usually used have trees, which provides shaded areas
- At the same time, it brings a notorious landscape personality to the campus as a whole, especially in the central axis.

15.-Do you feel that these spaces are welcoming?

- Broadly speaking, professors believe that university students do not just internalize that the campus should be a space that enhances their freedom.
- The green spaces and outdoor garden areas convey sensations of peace and tranquillity

16.-Do you value the presence of these spaces as a factor that enriches the reality of the campus?

- The outdoor areas of the campus are sometimes used as a place of sport, jogging, by citizens, which is a factor of knowledge and use of it by the population of the environment
- The attractiveness of these outdoor spaces would increase if the presence of artistic manifestations were increased.

17.-Do you consider that the campus is more motivating for the training activities of the students to have these outdoor spaces?

- Teachers understand that the role of the campus should be increased as a reality that attracts citizens to interact with the UPNA

GROUP: MANAGERS

A.-Functional dimension

1.-Are there outdoor spaces on campus where training activities are carried out?

- The managers of the UPNA know that the students use outdoor spaces of the enclosure
- In parallel, they communicate that there is currently a project to recover the Sadar riverbed, as a teaching area, but linked to the biodiversity of the river, thus activating the river as an "educational" actor.
- Exhibition activities are carried out in areas outside the enclosure, especially in the area between the Aulario and the Library
- Some managers point out that many students do not even know their own campus, because they limit their daily experience to the area of the Aulario and the Library

2.-Do you have any type of urban furniture (benches, pergolas, tables, etc.), conventional or singular?

- In the outdoor spaces of the UPNA Campus, the most useful urban furniture is being composed of the wooden tables and seats located next to the adjacent tent of the dining room.
- The managers consider that they would serve for training or relaxation activities in the open air, since they are already used with some frequency by students and teachers

3.-Do you have an adequate wi-fi network for these training activities?

- The managers report that the UPNA has the wi-fi network

4.-Are there other unique spaces of the university where you promote training activities (outside the central scope of the campus, such as research centers, residences, practice farms, sports facilities, or others)?

- The Sario building is used, located in the vicinity of the central area of the UPNA Campus
- Sometimes, musical events were held in the enclosure that attracted an external population.

5.-Do you participate as a representative of the university in the planning and implementation of training activities in these spaces? if so, what facilities or difficulties do you find for your task?

- The managers comment that they usually find themselves with financing difficulties to carry out actions in spaces of the enclosure
- In parallel, it is commented that the City Council of Pamplona has expressed its intention that the Sadar riverbed would serve as a space of connection between the campuses of the 2 universities, the UPNA and the University of Navarra
- Experiences have been made to improve physical and psychosocial environments, but they have not been able to be implemented properly
- Managers recognize that, sometimes, sufficient information is lacking on the potential of physical spaces as generators of physical and mental well-being

B.-Academic dimension

6.-Are they individual or collective activities, with several teachers and students?

- As a generic guideline, the managers comment that the activities developed by the students in this type of outdoor spaces are indistinctly collective and individual.
- In general, managers recognize that students do not understand the Campus as an attractive place that invites permanence

7.-Do you consider that this type of space encourages the realization of innovative training modalities, as a global strategy of the university?

- The managers believe that the outdoor areas adjacent to the buildings are an excellent place to generate training interaction between the university community, for which they should have some type of furniture that favours their use

8.-Do you consider that this type of spaces is especially useful in the training process of the students?

- It would be desirable for the areas of social interaction to be of a moderate scale, as this would also be consistent with the tutorial profile that wants to characterize the UPNA

C.-Perceptual and experiential dimension

9.-Do you consider the presence of these spaces as a factor that enriches the reality of the campus?

- The UPNA campus is capable of enriching your experience if the number and quality of these external places is increased, thus making greater use of the natural attractiveness of the enclosure

10.-Do you consider that the campus is more motivating for the training activities of the students to have these outdoor spaces?

- Managers value the increase in the use of these outdoor spaces to host training activities of different nature

4.3 Perception and evaluation of L&T spaces – Building scale

The present section is structured in three main epigraphs: students, faculty and managers, as corresponding to the diverse questionnaire sessions carried out along the LTSHE Erasmus+ Project at the UPNA. Once inside, three different contents are considered:

A.-Functional dimension

B.-Academic dimension

C.-Perceptual and experiential dimension

GROUP: STUDENTS

A.-Functional dimension

1.-Is there any interior space in the campus buildings (corridors, halls, etc.) where you carry out training activities?

- Students consider that they use certain interior spaces of buildings, especially the Aulario, although in a very secondary way
- The most frequent use is as a place of rest or waiting between sessions in classrooms, rather than for training actions of another nature; have vending machines

2.-Are they spaces located in central areas of buildings or in peripheral areas?

- The most used spaces are located on the top floor of the Aulario, with more informal furniture; from these locations you can enjoy a pleasant view over the main area of the campus
- The exhibition area of the distributor on the lower floor of the Aulario is also used.

3.-Do you have any type of furniture (benches, chairs, sofas, tables, etc.), conventional or unique?

- The places that students prefer are those located on the top floor of the Aulario, with more informal furniture
- In other internal spaces, such as corridors or distributors, there are only block chairs, based on rows of 6-8, which do not have the possibility of relocating flexibly

4.-Do you have an adequate wi-fi network for these training activities?

- In general, students enjoy the university's wi-fi network, although sometimes it does not have an ideal coverage

5.-Do you enjoy the appropriate levels of tranquillity (environmental noise, traffic of people, etc.)?

- The students express that the highest rates of tranquillity occur in the spaces located on the upper floors, while in those located on the ground floor there is usually a high traffic

6.-Do you consider that the size of these spaces is large, or small?

- As a global assessment, students understand that the dimensions of this type of space are excessively small, very particularly the corridors, which discourages their use

7.-Is the horizontal plane (ground) flat or irregular?

- These are horizontal section floors

B.-Academic dimension

8.-Are they individual or collective activities?

- Students who use these indoor places to buildings usually make use of them mostly individually
- This type of use is conditioned by the scarcity of available furniture

9.-Do only students participate, or also a teacher?

- It is space used by students, almost exclusively, and in most cases as a waiting place between class and class

10.-Does this type of space encourage the realization of innovative training modalities?

- Students consider that this typology, duly treated, could encourage the realization of innovative training activities

11.-Do you consider that this type of spaces is very useful in your training process?

- In general, students value them positively, but do not understand their existence as an important need.

C.-Perceptual and experiential dimension

12.-Do you enjoy from these spaces extensive or panoramic views of the campus or the outside environment?

- Students agree that the spaces located on the elevated floor of the Aulario enjoy attractive panoramic views over the central area of the campus
- However, those closer to the north façade of the building offer unattractive views over the front parking lot
- As a singular case, they point out that from the toilets of the elevated floors you can enjoy long-range views

13.-Do you enjoy adequate lighting, natural or artificial, or shade, in these spaces?

- In general, students understand that these spaces have a sufficient level of lighting, but are darker on lower floors, which is not attractive to them.

14.-Do you feel that these spaces are welcoming?

- With the exception of those located on the elevated floors, students do not perceive that these spaces are welcoming.

15.-Are there natural elements (trees, plants, etc.) in these spaces?

- In general, natural elements are not included

16.-Do these spaces have unique colors in their configuration, or do they use the usual neutral tones?

- They don´t, using excessively neutral or dull tones, which is unattractive to students.

17.-Do you value the presence of these spaces as a factor that enriches the reality of the buildings?

- Students understand that this type of interior spaces enrich the experience of buildings, but the circumstances do not yet exist

18.-Do you consider that buildings are more motivating for your training activities by having these interior spaces to buildings?

- Undoubtedly, students would value a greater presence of this type of spaces as a factor that would increase their well-being and desire to stay longer at the university, beyond the one they use for their regulated training.

GROUP: FACULTY

A.-Functional dimension

1.-Is there any interior space in the campus buildings (corridors, halls, etc.) where you promote training activities?

- Teachers consider that certain interior spaces of buildings are used, especially on the upper floors of the Aulario
- The usual use of them is reduced to functioning as a place of rest or waiting between sessions in classrooms
- The lower floors usually host exhibitions, and the formative contribution derived from them
- The Library is the container that treasures the greatest potential as a centrality of this type of space

2.-Are they spaces located in central areas of buildings or in peripheral areas?

- The spaces that are used the most are located on the elevated floors of the Aulario, with more informal furniture
- The exhibition area of the distributor on the lower floor of the Aulario is also used.
- On the other hand, there is the Student Council Room, in the Aulario building, and spaces of this type in the Sario building.
- In general, teachers value the courtyard spaces, or atrium, in the buildings, noting that it was an initial idea of the architectural project of the enclosure

3.-Do you have any type of furniture (benches, chairs, sofas, tables, etc.), conventional or unique?

- The places of most frequent use are those located on the elevated floors of the Aulario, where they have a more informal furniture, consisting of sofas
- In corridors or distributors there are only block chairs, based on rows of 6-8, which cannot move
- Teachers point out that lockers should be set up so that students can leave materials, clothes for certain activities, etc.

4.-Do you have an adequate wi-fi network for these training activities?

- The interior spaces have the university's wi-fi network

5.-Do you enjoy the appropriate levels of tranquillity (environmental noise, traffic of people, etc.)?

- The teachers comment that, some time ago, there were spaces characterized by their tranquillity, which were used for rest times, or lunch, but were suppressed
- Certain spaces of this nature have low quality acoustics, which harms the well-being and tranquillity of those who use them.

6.-Do you consider that the size of these spaces is large, or small?

- In general, teachers express that these spaces are excessively small in number and dimensions, and that they have been gradually reduced.

7.-Is the horizontal plane (ground) flat or irregular?

- Normally they are floors of continuous horizontal section

B.-Academic dimension

8.-Are they individual or collective activities, with several teachers and students?

- Some professors recall the experience of the JAULAB Project, in which students and teachers from various areas of knowledge collaborated, which was located in the Library, consisting of a cubicle where an acoustic experience was lived.
- Some professors point out that there is an Associates Room, where many teachers meet, which encourages the encounter and interaction between them

9.-Does this type of space allow or encourage you to promote innovative training modalities?

- In general, it is considered that this type of space treasures a remarkable potential to host innovative training activities
- Some professors express that sometimes they carry out certain training activities with students, such as measuring with steps the dimensions of each area of the building

10.-Do you consider that this type of spaces is very useful in the training process of the students?

- Professors indicate that the gradual transfer of this type of spaces to private commercial entities (bank branches or others), distances them from their usefulness as hosts of training actions

C.-Perceptual and experiential dimension

11.-Do you enjoy from these spaces extensive or panoramic views of the campus or the outside environment?

- professors emphasize that, from the relationship spaces located on the upper floors of the Aulario, interesting panoramas over the campus are enjoyed.

12.-Do you enjoy adequate lighting, natural or artificial, or shade, in these spaces?

- In general, this type of space has adequate levels of lighting

13.-Do you feel that these spaces are welcoming?

- Professors attach importance to cognitive accessibility, pointing out that the composition of buildings on the UPNA Campus makes it difficult for users to orient themselves easily, due to their repetitive or symmetrical geometries.
- This makes it difficult for them to be perceived as cozy spaces, but on the contrary, generators of concern.

14.-Are there natural elements (trees, plants, etc.) in these spaces?

- Except for some exceptions in departmental buildings, natural elements are not included

15.-Do these spaces have unique colors in their configuration, or do they use the usual neutral tones?

- Usually excessively neutral or muted tones are used, which hinders cognitive accessibility, since the geometries used in the architectural design are mostly modular or symmetrical profile.
- Uniform chromatic treatment does not help orientation, a particularly sensitive issue in people with disabilities

16.-Do you value the presence of these spaces as a factor that enriches the reality of the buildings?

- The teachers emphasize that this type of spaces would contribute, as an added effect, to family reconciliation
- The buildings where the interaction between teachers and students is promoted, through the physical proximity between their respective usual spaces, is an enriching situation

17.-Do you consider that the buildings are more motivating for the training activities of the students by having these interior spaces to the buildings?

- Professors would value a greater presence of this type of space as a factor that would increase the interaction between members of the university community, and the innovative learning of a social nature linked to it.
- In certain situations, the use of vertical planes can be a resource of expression of the students

GROUP: MANAGERS

A.-Functional dimension

1.-Are there interior spaces in the campus buildings (corridors, halls, etc.) where training activities are carried out?

- In general, a lack of common spaces is exposed
- Managers report that certain interior spaces are available for stay or relationship between students
- The common spaces located on the upper floors of the Aulario building respond to this typology, adding that from them you can enjoy attractive perspectives on the central core of the enclosure
- Some managers express that the geometric composition of the buildings generates disorientation in the users, as there is a uniform design, without spatial or chromatic differentiation
- Exhibition and micro theatre activities are carried out in spaces in interstitial places of buildings

2.-Do you have any type of furniture (benches, chairs, sofas, tables, etc.), conventional or unique?

- To enable the interior interstitial spaces to the buildings, the managers report that, in their day, pieces of furniture were gathered, which would encourage students to use these places as areas of relaxation.
- They report the intention of the UPNA to replicate the format of the areas located on the upper floors of the Aulario in other enclaves, for which the procedures for the acquisition of furniture have already begun.
- These places enjoy considerable tranquillity for their use, as they are not dense traffic areas
- Some managers transfer the disadvantages of using "L" shaped tables in teaching spaces
- The option of introducing a chromatic code that differentiates areas in buildings has been raised, but an intervention criterion has not been reached

3.-Do you have an adequate wi-fi network for these training activities?

- Inside the buildings enjoy the university's wi-fi network

4.-Do you participate as a representative of the university in the planning and implementation of training activities in these spaces? if so, what facilities or difficulties do you find for your task?

- The managers communicate that they are planning the transformation of the spaces located at the ends of the 3rd floor of the Aulario, to install vending machines and other furniture for leisure, restoration or relationship activities.
- They convey the difficulties encountered if the UPNA intends to alter aspects of the buildings, as this could be incompatible with the copyright of the architectural design; such is the case of the change of chromatic codes in certain walls
- Some managers convey the disadvantage that an appropriation of space by the corresponding teachers is understood

B.-Academic dimension

5.-Does this type of space encourage the promotion of innovative training modalities, as a global strategy of the university?

- Managers consider that it would be beneficial to have more properly furnished spaces where students could pick up and perform personal activities.

6.-Do you consider that this type of spaces is especially useful in the training process of the students?

- In general, the existence of these spaces is positively valued

C.-Perceptual and experiential dimension

7.-Do you consider the presence of these spaces as a factor that enriches the reality of the buildings?

- Managers consider that, to make these spaces more attractive, they could incorporate natural elements

8.-Do you consider that the university is more motivating for the training activities of the students by having these interior spaces to the buildings?

- These spaces are valued, as they dynamize the university experience

- To increase the motivation of the students, and given that little interaction between students and teachers is detected derived from the departmental model, it would be desirable to transform interstitial spaces in these buildings
- Some managers consider it necessary to activate spaces for students, and that this encourages more female participation compared to male participation

4.4 Perception and evaluation of L&T spaces – Classroom scale

The present section is structured in three main epigraphs: students, faculty and managers, as corresponding to the diverse questionnaire sessions carried out along the LTSHE Erasmus+ Project at the UPNA. Once inside, three different contents are considered:

A.-Functional dimension

B.-Academic dimension

C.-Perceptual and experiential dimension

A.-Functional dimension

1.-Are there innovative classrooms on your campus where you carry out training activities?

- Students identify a small number of classrooms with an innovative profile, as those with conventional solutions predominate.
- Among the most attractive, they point out the Gela Saludable, which has an allegorical mural of Peace
- They value the existence of some departmental spaces, with concentric tables and even only with chairs

2.-Do you have any type of unique furniture (different from the usual chairs, tables, etc.)?

- As a singular case in its layout, the classroom called "fish tank" has a double grandstand
- However, they see as a drawback the excessive distance between the stand and the seats
- There are new, more flexible classrooms, with innovative furniture, which are of interest to the collective, as is the case of Classroom 026bis, located on the ground floor of the Aulario

3.-Do you have an adequate wi-fi network for these training activities?

- In general, yes, because students use the university's wi-fi

4.-Do you enjoy the appropriate levels of tranquillity (environmental noise, traffic of people, etc.)?

- As a general observation, students state that if classrooms are characterized by a quiet environment, using them is more palatable to them.

5.-Are the walls of these innovative classrooms opaque or transparent?

- Most are opaque towards the corridors or common interior areas, although they have exterior openings, many of which are resolved with the typical circular geometry that characterizes the set of buildings on campus
- In some buildings, the central rows of classrooms do not even have windows, which makes them unattractive spaces for students.

6.-Do you consider that the size of these classrooms is large, or small?

- This type of innovative classroom is very exceptional
- Its dimensions are excessively small

7.-Is the horizontal plane (ground) flat or irregular?

- The floor, of horizontal section, favours the flexibility of the pieces of internal furniture

8.-Do you use unique spaces in the library for training activities?

- Students usually book small classrooms, in the form of cubicles, prior to the process of reserving them for certain activities
- On the sides of the library, small reading corners have been arranged, such as comfortable furniture, but they are not sufficiently isolated from the rest so that certain activities are generated.

9.-Do you use unique spaces of other buildings for training activities (other than classrooms or buildings that house conventional teaching spaces, such as research centers, residences, sports facilities, or others)?

- Students recognize that they use the Sario building for certain activities
- Within the campus, they sometimes use another unique area: the Audiovisual Room
- They would like to be able to make use of spaces in some departmental buildings

B.-Academic dimension

10.-Are they individual or collective activities?

- In general, students use these innovative classrooms in a group way.

11.-Do only students participate, or also a teacher?

- Usually, the use of these classrooms is done together with the teaching staff

12.-Does this type of classroom encourage the realization of innovative training modalities?

- Students say they do

13.-Do you consider that this type of innovative classrooms is very useful in your training process?

- Students value this type of classroom very positively, as useful spaces in their training activities

C.-Perceptual and experiential dimension

14.-Do you enjoy from these classrooms extensive or panoramic views of the building, the campus or the outside environment?

- Depending on the classroom in question, whether or not they enjoy external perspectives
- From the Gela Saludable there are certain views, but to the surroundings of the car park; in the Audiovisual Room, none, as it does not have openings

15.-Do you enjoy adequate lighting, natural or artificial, or shade, in these classrooms?

- For the reasons stated, it depends on the classroom in question, they may have a better or worse level of lighting.

16.-Are there natural elements (trees, plants, etc.) in these classrooms?

- In general, there are no natural elements inside these classrooms.

17.-Do you feel that these classrooms are welcoming?

- The assessment of the students varies, from the positive, in the case of the Gela Saludable, to the negative (Audiovisual Room)

18.-Do these classrooms have unique colors in their configuration, or do they use the usual neutral tones?

- In some cases, chromaticism is present in an attractive way, as in the case of the mural of the Gela Saludable
- The other vertical planes are usually resolved with neutral tones

19.-Do you value the presence of these innovative classrooms as a factor that enriches the reality of the campus?

- This type of classroom enjoys particularly good valuation by students, as elements that bring attractiveness to the campus

20.-Do you consider that the campus is more motivating for your training activities by having these innovative classrooms?

- Students understand that they are motivating for their experience

GROUP: FACULTY

A.-Functional dimension

1.-Are there innovative classrooms on your campus where you promote training activities?

- Professors reflect that there is a small number of classrooms with an innovative profile, since most reflect conventional solutions
- In parallel, they underline the importance of having adequate research spaces
- The Audiovisual Room promotes innovative organizations of the space, although it constitutes an exceptional case

2.-Do you have any type of unique furniture (different from the usual chairs, tables, etc.)?

- As a singular case, the "Gela Saludable" or classroom 026bis is mentioned, where mobile chairs have recently been installed, generating a flexible classroom model that will be replicated in several more classrooms within the Aulario building
- However, they see as an inconvenience sometimes that the wiring system hinders the aforementioned flexibility in the use of furniture
- In general, teachers believe it is necessary to make conventional furniture and media (blackboard, etc.) more compatible with technological tools.

3.-Do you have an adequate wi-fi network to promote these training activities?

- In general, you can enjoy the wi-fi network of the university

4.-Do you enjoy the appropriate levels of tranquillity (environmental noise, traffic of people, etc.)?

- As a general consideration, teachers consider that doors should be avoided in the main plane of the stage/screen/blackboard, as they generate acoustic and operating discomfort.
- Professors consider it important to have good acoustic qualities in the classroom, which promotes adequate levels of general tranquillity

5.-Are the walls of these innovative classrooms opaque or transparent?

- Teachers state that most classrooms are opaque towards corridors or common interior areas
- In certain buildings, classrooms arranged in linear developments in the central area do not even have windows, which makes them unattractive spaces for students.
- It is indicated that in the past, the classrooms were transparent, but when they were not accepted, they proceeded later to install panels and vinyls that made them opaque.

6.-Do you consider that the size of these classrooms is large, or small?

- A common drawback stems from the size of the classrooms, designed to accommodate a large number of students, which makes it difficult to implement innovative training activities
- As an added observation about the size and layout of classrooms, teachers express that it would be desirable for screens not to visually hinder whiteboards.
- In addition, they advise that the density of the furniture be reduced, as it hinders mobility within the classroom space

7.-Is the horizontal plane (ground) flat or irregular?

- The floor, of horizontal section, favours the flexibility of the pieces of internal furniture; this is clearly reflected in classrooms such as the "Gela Saludable" or Classroom 026bis, recently renovated
- As a singular case, in certain classrooms of Magisterium you could give Mathematics class, using the floor

8.-Do you use unique spaces in the library to promote training activities?

- Professors know that students usually book small classrooms, in the form of cubicles
- At the same time, they have recently created spaces on the sides of the building, on the ground floor, although they are not sufficiently isolated from the rest to generate innovative training activities.
- The Library's own spaces can encourage interaction between teachers and students

9.-Do you use unique spaces in other buildings to promote training activities (other than classrooms or buildings that house conventional teaching spaces, such as research centers, residences, sports facilities, or others)?

- Teachers mention that spaces in the Sario building are used for certain activities
- Research spaces are also used

B.-Academic dimension

10.-Are they individual or collective activities, with several teachers and students?

- In general, these innovative classrooms are used in a group way, with teachers and students

11.-Does this type of innovative classroom allow or encourage you to promote innovative training modalities?

- Teachers say that it is encouraged, but their presence is still too small

12.-Do you consider that this type of innovative classrooms is very useful in the training process of the students?

- The presence of this type of classroom is valued positively, as useful spaces in their training activities, but their number is still insufficient, although in the Aulario building several spaces of this type are being enabled

C.-Perceptual and experiential dimension

13.-Do you enjoy from these classrooms extensive or panoramic views of the building, the campus or the outside environment?

- Professors believe that, depending on the classroom in question, they enjoy or not enjoy external perspectives

14.-Do you enjoy adequate lighting, natural or artificial, or shade, in these classrooms?

- Teachers consider that closed classrooms, without natural light, are very inadvisable for the motivation of the student

15.-Are there natural elements (trees, plants, etc.) in these classrooms?

- As a generic observation, there are no natural elements inside these classrooms

16.-Do you feel that these classrooms are welcoming?

- Professors express that most classrooms are excessively impersonal in their spatial configuration, being desirable that they could acquire a certain "soul" that would make them more welcoming.
- At the same time, they consider that the stands or platforms do not contribute to generating a sense of spatial welcome or interaction between teachers and students

17.-Do these classrooms have unique colors in their configuration, or do they use the usual neutral tones?

- Except for specific exceptions, teachers consider that classrooms suffer from excessive monotony in their formal configuration (colors and shapes)
- It would be desirable to introduce chromatic codes of greater variety
- As a unique case, the Gela Saludable has a colourful mural on the theme of Peace

18.-Do you value the presence of these innovative classrooms as a factor that enriches the reality of the campus?

- Professors understand that this type of classroom enjoys a particularly good assessment by students, as elements that bring attractiveness to the UPNA campus

19.-Do you consider that the campus is more motivating for the training activities of the students by having these innovative classrooms?

- Teachers understand that they are motivating for training actions
- The elimination of platforms or podiums promotes greater interaction in the classroom, which is more motivating for students
- As an added observation, they point out that more visibility should be given to the thesis defences in UPNA buildings, and the consequent visual presence in the classrooms that host this type of academic events.

GROUP: MANAGERS

A.-Functional dimension

1.-Are there innovative classrooms on campus where training activities are carried out?

- Managers convey the impression that students demand greater internal flexibility in the classrooms, because in this way they see more viable the realization of training activities other than conventional ones
- In general, UPNA classrooms are very conventional, and the blinds understand that it is difficult to introduce substantial changes.
- Micro theatre activities are carried out in spaces in certain classrooms
- There is a trial simulation classroom, in the Encinas building

2.-Do you have any type of unique furniture (different from the usual chairs, tables, etc.)?

- Managers convey that classrooms are used for various degrees, so their design tends to be very standard
- It is understood that flexibility is a quality to achieve in the classroom, an issue that is helped by mobile furniture (chairs and tables), as well as the horizontal section of the floor
- In some cases, such as Classroom 026bis, attempts have been made to place screens on different walls
- The elimination of the teacher's dais is valued, and the incorporation of chairs with tray in the area under the seat, to avoid coat racks

- Wiring that is necessary for tables or chairs generates some inflexibility

3.-Do you have an adequate wi-fi network to promote these training activities?

- In general, students use the university's wi-fi in classrooms

4.-Are there unique spaces in the library where training activities are carried out?

- Managers value the recent creation within the Library of the area called "Open Space", located in the central area of the ground floor of the building
- However, due to its large dimensions, the managers consider that the Library should reformulate the characteristics of its internal spaces.
- Some managers convey the opinion of the students that they do not have useful spaces for study in the Library, and that they are dedicating themselves to administrative tasks areas previously dedicated to the study or bibliographic consultation

5.-Are there unique spaces in other buildings where training activities are carried out (other than classrooms or buildings that house conventional teaching spaces, such as research centers, residences, sports facilities, or others)?

- Spaces in the Sario building are frequently used for certain activities
- Among other places, the "Fernando Remacha" Classroom stands out.

6.-¿Do you participate as a representative of the university in the planning and implementation of training activities in these spaces? if so, what facilities or difficulties do you find for your task?

- In general, managers report that they are participating in the process of reform of the double-grandstand classroom (Classroom 09 and O9-bis)
- The implementation of elements that promote visual or phenomenological transparency in the classroom is a complex matter, due to the pre-existing inertia, both material and mentality of certain teachers.
- The implementation of innovative classrooms has cost years of effort to certain managers
- As a general trend, in recent years there has been a spatial subdivision, enabling smaller classrooms than in the past

B.-Academic dimension

7.-Does this type of innovative classrooms encourage the promotion of innovative training modalities, as a global strategy of the university?

- It is considered that they do promote them
- As a specific observation, it is advised that flexible classrooms, with an innovative profile, should be oriented towards the interior of the campus, not towards the outside, as this avoids noise pollution of the urban environment, especially the parking lot located north of the Aulario

8.-Do you consider that this type of innovative classrooms is especially useful in the training process of the students?

- Managers consider that innovative classrooms increase the training quality of students

- In the opposite direction, certain forms of classrooms are not attractive, such as the 10 that are excessively narrow and elongated, with a single access, as happens on the upper floors of the Aulario

C.-Perceptual and experiential dimension

9.-Do you consider the presence of these innovative classrooms as a factor that enriches the reality of the university?

- The progressive transformation of classrooms towards a higher index of internal flexibility is highly valued, as enriching elements of the UPNA
- In terms of visual transparency, some interventions were carried out, but then vinyls were superimposed to mitigate it, at the request of the teaching staff.

10.-Do you consider that the university is more motivating for the training activities of the students by having these innovative classrooms?

- Flexible classrooms are considered to generate added motivation in students
- Managers are carrying out the transformation of 5 classrooms, in the Aulario building

5. Outcomes and specific recommendations for institutional policy and practice for the design and implementation of L&T space at UPNA

In the present section of the document, some specific recommendations are expressed. Those are the direct outcomes which derive from the basic information gathered through the methodological research work.

Such series or specific recommendations cover the most relevant ideas and suggestions regarding the Learning&Teaching future spaces at the Universidad Pública de Navarra (UPNA), centered in the Arrosadía campus in the city of Pamplona. These recommendations constitute one of the transcendental outcomes of the whole research activities carried out, and pretend to draw criteria for the future optimization of L&T spaces of the university. Globally understood, the aforementioned recommendations are the direct outcome of two convergent dynamics: first, the research activities developed during the Erasmus+ Project; second, the outcomes of the answers to the designed questionnaires for the three groups which have been explained before, in the previous sections.

As to describe the structure of the present section, it is needed to explain that it becomes the last one in a coherent and progressive sequence. In previous sections, the answers to the questionnaires were classified in the following epigraphs:

A.-Functional dimension

B.-Academic dimension

C.-Perceptual and experiential dimension

Thus, in the present las section, a new epigraph is added: "**D.-Projectual dimension"**. It corresponds to the las stage in the aforementioned sequence, that one whose contents are centered in specific proposals for the future of the UPNA.

Thus, the present section is structured following the 4 basic scales which organize the whole documents corresponding to the LTSHE Project: city, campus, building and classroom.

5.1 Outcomes and specific recommendations for L&T spaces – City scale

The present section is structured in three main epigraphs: students, faculty and managers, as corresponding to the diverse questionnaire sessions carried out along the LTSHE Erasmus+ Project at the UPNA. Once inside, one main content is considered:

D.-Projectual dimension

GROUP: STUDENTS

D.-Projectual dimension

- Students would see as something positive that the UPNA had more quantity and diversity of spaces outside the campus, where innovative training activities can be carried out
- By increasing these university-urban synergies, the training potential of the city of Pamplona and its many institutions and entities would be profitable.
- The UPNA should incorporate within the central urban area more headquarters or information points, to increase its visibility
- Within the UPNA campus, the activities called to convene external groups should be increased
- In order to properly plan and implement an optimization of all these issues, the UPNA should create an internal Commission, as part of its permanent management structure

GROUP: FACULTY

D.-Projectual dimension

- As a general consideration, it would be advisable for the UPNA to propose a greater presence within the urban area of Pamplona (it should be remembered that, at the origin of the campus, the option of implementing it was contemplated through the adaptation of heritage pieces within the central urban area, instead of a peripheral enclosure)
- The above dynamics could be channelled through the elaboration of a functional and typological study applied to the case of Pamplona, in order to explore future opportunities
- The university could enable some headquarters in this urban interior, as this would increase its visibility
- Conversely, the UPNA must persevere in the organization of activities within its own campus, with the intention of convening external participants.
- Strategies to strengthen university-city synergies in Pamplona need to be explored
- The UPNA would have to consider an adaptation of its regulations, which had as its purpose a flexibilization of schedule that allows and encourages students to leave the campus to develop alternative training activities
- The UPNA should carry out studies leading to increase accessibility, in its multiple meanings, physical, cognitive and social, among others; accessibility affects spatial relations with the socio-urban environment
- In order to properly plan and implement an optimization of all these issues, the UPNA should create an internal Commission, as part of its permanent management structure

GROUP: MANAGERS

D.-Projectual dimension

- Given that the global scale of the UPNA and its academic profile were designed for the socio-urban environment of Navarre, it would be advisable to undertake planning that would increase its visibility within the urban area of Pamplona
- With the aim of promoting the crystallization of a university community of greater interaction, the UPNA should value the creation of a Student building, which also acts as a centrality for national and international students.
- The UPNA must continue with the initiatives to generate qualitative transformation actions in sectors of the city where vulnerable groups reside
- In coordination with other administrations and entities, the UPNA must lay the foundations to promote sustainability as it affects synergies with the socio-urban environment.
- In this sense, it would be advisable to carry out a study on the increase in sustainability, in its various meanings, and its link with the SDGs
- It is desirable to increase agreements and agreements with external institutions and entities, both administrative and otherwise, such as associations and NGOs
- In order to properly plan and implement an optimization of all these issues, the UPNA should create an internal Commission, as part of its permanent management structure

5.2 Outcomes and specific recommendations for L&T spaces – Campus scale

The present section is structured in three main epigraphs: students, faculty and managers, as corresponding to the diverse questionnaire sessions carried out along the LTSHE Erasmus+ Project at the UPNA. Once inside, one main content is considered:

D.-Projectual dimension

GROUP: STUDENTS

D.-Projectual dimension

- In general, students of UPNA feel as attractive spaces those that can multiply in the external areas of the campus
- In addition to providing places of complementary training, they serve as areas of personal relaxation, which increases the feeling of belonging and the desire to stay longer in the enclosure
- It would be advisable for the UPNA to consult the assessments of students on the outdoor physical spaces of the campus, as training resources
- The activation of more spaces of this nature would be more effective if the UPNA could undertake a dynamic of ideation of umbraculums that, in the form of modular pieces, could be distributed throughout the campus, sharing a common design that reinforced the formal unity of urban furniture.
- It would be desirable to increase the presence of works of art in the outdoor spaces of the campus

- The UPNA has to consider the creation of a space of spatial (pedestrian) introduction to the campus, which modifies the current dynamics where an immediacy occurs from the parking lot to the internal spaces of buildings
- Uses and functions must be implemented at the southern end of the campus (in the surroundings of the Rectorate), which induce people to move daily and thus enjoy the campus
- An option for the above could be the creation of a building that houses the Student's House
- It is advisable to decentralize the cafeteria and uses associated with leisure
- The UPNA should elaborate a study that would collect the main modalities of Teaching/Learning and their associated spatial typologies, incorporating references of excellence in national and international universities, related to the campus scale
- In order to properly plan and implement an optimization of all these issues, the UPNA should create an internal Commission, as part of its permanent management structure

GROUP: FACULTY

D.-Projectual dimension

- The central axis of the UPNA campus (large linear axis that links the library with the Rectorate) is not sufficiently profitable for its frequent use by the university community
- The transformation of this “backbone” would mean that it would function with greater fidelity to its historical essence (relationship space), leaving behind its behavior as a mere passive-perspective space.
- Planning should be undertaken that aspires to take advantage of outdoor spaces, in general
- One of the recommended actions would be to promote a contest of ideas for the design of exterior shades, which would provide places of study and external leisure along the surface of the land.
- A requalification of the space known as "La Plaza", located between the Aulario and the Library, must be devised to increase its role as a place of interaction
- Students would benefit from the use of external areas if a progressive presence of artistic works were carried out, as it would increase the perceptual sensations of "mind-fullness"
- The area approaching the campus from the northern edge (parking beach) should be redesigned, in order to become a friendly and attractive reception element for the UPNA with respect to the immediate context
- Possibilities must be studied to make free spaces profitable, designing a process of implementation of ICT´s that makes both dimensions compatible (face-to-face and online teaching), so that they feed back
- As a preliminary task, the UPNA should prepare a study on campus models, incorporating references of excellence in national and international universities, so that

it has case studies that have solved the optimization of its campuses in terms of innovation and quality.

- A first task in this regard would be to elaborate a documentary support where the UPNA campuses were classified, considering their urban-architectural features, in order to be able to investigate relevant examples of qualitative transformation on the international stage.
- The UPNA has to carry out a reflection aimed at enhancing accessibility, in its multiple meanings, physical, cognitive and social; among other actions, eliminate possible obstacles in pedestrian routes or access to the campus and buildings
- In order to properly plan and implement an optimization of all these issues, the UPNA should create an internal Commission, as part of its permanent management structure

GROUP: MANAGERS

D.-Projectual dimension

- In order to activate outdoor spaces of the enclosure as new places that host innovative teaching/learning modalities, the UPNA could convene a contest of ideas for the design of elements of smaller scale umbraculums and unified morphology, which could be distributed throughout the land.
- The creation of a Student Building by the UPNA on campus would be useful to increase the feeling of belonging
- As an entrance space from the urban environment, the configuration of the area located north of the main entrance to the UPNA Campus should be reformulated, avoiding that it behaves as a physical and visual barrier.
- The UPNA should consider the creation of a student interest center that vitalizes the backbone of the campus; perhaps the Sario building will help something in that sense, but this new centrality of the enclosure would be reinforced with some new piece whose functionality would generate flows of use and circulation that would revitalize the aforementioned spine
- As a complementary action, pieces of external auditorium anchored to this pedestrian axis could be designed; this would be consistent with one of the ideas of the initial project of the campus, which provided for the construction of a semi-buried auditorium in this enclave.
- In this sense, and in advance, it would be convenient for the UPNA to carry out a case study of the international university scenario, to identify examples of excellence in the design or transformation of campuses, including references in the activation of external areas such as new training places
- As a generic value, the UPNA must undertake plans and actions aimed at promoting sustainability on campus, in its various meanings, being advisable to prepare a document of scientific profile that addresses these issues
- It is convenient for the UPNA to develop a strategy to raise awareness about the potential that physical spaces have as generators of well-being at various levels.

- Globally, and although applicable to the 4 scales (city, campus, building and classroom), the UPNA must set itself the goal of developing a comprehensive Master Plan that integrates the opportunities for qualitative transformation of its implementations.
- This Master Plan must combine Teaching/Learning and physical space, also linking the theoretical foundation with the practical vocation. As a general philosophy, it is recommended that the UPNA establish as a paradigm of ideation and action the "Educational Campus"
- In order to properly plan and implement an optimization of all these issues, the UPNA should create an internal Commission, as part of its permanent management structure

5.3 Outcomes and specific recommendations for L&T spaces – Building scale

The present section is structured in three main epigraphs: students, faculty and managers, as corresponding to the diverse questionnaire sessions carried out along the LTSHE Erasmus+ Project at the UPNA. Once inside, one main content is considered:

D.-Projectual dimension

GROUP: STUDENTS

D.-Projectual dimension

- Once listened to students, it becomes sensible to recommend that the UPNA should undertake a planning aimed at increasing interior spaces, properly furnished, that induce students to feel interested in staying longer on campus
- Among others, replacing the exclusive elements of the corridor, to try to transform them into spaces for social learning
- With this, more places would be offered to carry out innovative training actions, and many spaces that until now are underused would be made profitable more effectively.
- In this sense, it is important that in the medium term, the UPNA should prepare a study on innovative Teaching/Learning modalities and their associated spatial typologies, incorporating references of excellence in national and international universities, applied to the scale of the building.
- Within the list of possible spaces to activate, those located on the elevated floors would be more suitable for certain types of activities that require more tranquillity, because in these peripheral areas of the building, the circulation density is lower than on lower floors
- In analogy with the campus scale, it would be positive if the UPNA included the physical spaces inside the buildings as part of the student surveys.
- It would be desirable to increase artistic manifestations in interior spaces to buildings, such as murals
- In order to properly plan and implement an optimization of all these issues, the UPNA should create an internal Commission, as part of its permanent management structure

GROUP: FACULTY

D.-Projectual dimension

- The UPNA must ensure that the interior spaces in common areas of its buildings, properly furnished, are increased, with the aim of inducing students to feel interested in staying longer on campus
- In parallel, it should be valued to devise a planning aimed at increasing cognitive accessibility in the internal spaces of their buildings.
- A possible remedy in this regard could be the use of a chromatic code superimposed on the existing walls, provided that it is authorizable in terms of intellectual property rights of the architectural design; with this, it will be in parallel improving the accessibility of groups with various types of disability (visual or cognitive, for example)
- It would be convenient to enable more interior spaces to house training activities of an alternative nature, including furniture that was used for staying and temporary recreation
- The installation of appropriate vending machines would increase the sense of well-being in these spaces, potentially hosting tutoring activities between teachers and students.
- Large buildings, such as the Aulario, should reformulate their internal spaces, in order to increase their quantity and quality, in order to promote greater interaction between members of the university community, thus increasing social learning.
- In similarity with the campus scale, the free spaces inside the buildings must be profitable, implementing ICTs so that both dimensions (face-to-face and online teaching) enrich each other
- In analogy with the policy of educational enrichment superimposed on campus, the interior spaces of buildings could be receptacles of artistic works.
- The UPNA should carry out studies leading to increase accessibility to buildings, in their multiple meanings
- The UPNA could carry out a case study of the international university scene, to identify examples of excellence in the design or transformation of buildings
- In parallel, the work of teacher training should include the use of the spatial elements of the building as additional actors that can positively influence innovation
- In order to properly plan and implement an optimization of all these issues, the UPNA should create an internal Commission, as part of its permanent management structure

GROUP: MANAGERS

D.-Projectual dimension

- In general, the UPNA should undertake a planning aimed at increasing interior spaces, properly furnished, that encourage greater interaction between members of the university community

- This planning could be translated into the elaboration of a document that, in addition to collecting generic architectural typologies, incorporates a study of examples of national and international excellence.
- It could be proposed from the sphere of management an action of endowment and homogeneous design of interstitial spaces in the main architectural pieces
- This dynamic should be accompanied by the installation of furniture carefully selected for this purpose
- In similarity with what is indicated in the other scales, the UPNA must undertake plans and actions aimed at promoting sustainability in its buildings, campuses, in its various meanings of it, being advisable the elaboration of a specific document
- The UPNA must make a communication effort to demonstrate the potential that physical spaces have as generators of well-being
- In parallel, it would be positive to carry out a pedagogical work so that teachers understand that spaces are more profitable if they are shared for versatile activities
- In order to properly plan and implement an optimization of all these issues, the UPNA should create an internal Commission, as part of its permanent management structure

5.4 Outcomes and specific recommendations for L&T spaces – Classroom scale

The present section is structured in three main epigraphs: students, faculty and managers, as corresponding to the diverse questionnaire sessions carried out along the LTSHE Erasmus+ Project at the UPNA. Once inside, one main content is considered:

D.-Projectual dimension

GROUP: STUDENTS

D.-Projectual dimension

- The ideation of innovative classroom spaces should be preceded by a general study of teaching/learning modalities, so that various solutions could be designed that respond adequately to the various areas of general knowledge.
- It would be desirable for the UPNA to continue the work already begun to equip itself with classrooms with an innovative profile, as is already the case in the Gela Saludable or Classroom 026bis
- A general feature should be that they have floor with horizontal section, to promote their flexibility
- The furniture must be effectively "mobile", easily movable, to be able to modify the internal distributions with agility, and adapt them to the pedagogical format of each occasion
- Another factor to assess is the use of bright colors, as a factor of spatial differentiation
- Spaces must be set up for vulnerable groups
- Classroom walls could incorporate engaging content

- The UPNA should undertake a progressive process of limiting the number of students per teacher, with the consequent reduction of the maximum size in certain classrooms
- In similarity with what has been pointed out in the campus and building scales, the UPNA should incorporate its observations on physical classroom spaces into the teacher assessment surveys of students.
- In line with the above, the UPNA should prepare a study on innovative Teaching/Learning modalities and their associated spatial typologies, incorporating references of excellence in national and international universities, applied to the scale of the classroom, as a basic educational cell
- On a formative level, but with an impact on the physical space of the classroom, the UPNA must carry out training so that teachers increase the innovative profile in their work
- In order to properly plan and implement an optimization of all these issues, the UPNA should create an internal Commission, as part of its permanent management structure

GROUP: FACULTY

D.-Projectual dimension

- The UPNA should undertake a process of reformulation of the ratio between number of students / teacher and its impact on the size of the classrooms, since the optimization of this parameter would contribute to promoting innovative training actions
- A study must be carried out in parallel to provide the UPNA Campus with classroom spaces where research activities are carried out
- In general, it must evolve towards a global model that implies a greater presence of classrooms where training innovation is welcomed and encouraged, introducing as a general feature a greater degree of spatial flexibility; In addition, reducing the density of furniture would favour such flexibility and interaction between teachers and students.
- The rethinking of spatial solutions for this type of classroom should be preceded by a general study of teaching/learning modalities, so that alternative design elements to the conventional (furniture, color or walls of greater visual or phenomenological transparency) could be introduced.
- As an added observation to this rethinking, consideration should be given to replacing solutions based on homogeneous classrooms with others that differ more, depending on the subjects to be taught.
- The UPNA has the Higher Center for Educational Innovation, which is called to provide criteria for qualitative transformation for classrooms, in terms of spatial innovation associated with education
- As in any of the physical scales, as far as the classrooms are concerned, the UPNA should carry out studies conducive to increasing accessibility, in its multiple meanings, physical, cognitive and social, among others.

- In addition to a study that links the modalities of Teaching/ Learning with the physical spaces of the classroom, the UPNA could carry out a case study of the international university scenario, to identify examples of excellence in the design or transformation of classrooms, in the key to innovation
- On a different level, the activities that the UPNA organizes in terms of teacher training should incorporate the appropriate use of spatial elements as additional actors that can positively influence the training innovation that develops in the classrooms.
- In order to properly plan and implement an optimization of all these issues, the UPNA should create an internal Commission, as part of its permanent management structure

GROUP: MANAGERS

D.-Projectual dimension

- The UPNA must persevere in the progressive transformation of existing classrooms, in line with the actions already initiated
- The quantity and quality of classrooms must be increased, in terms of spatial innovation, as has already been implemented in some classrooms of the Aulario
- A transversal characteristic should be that the classrooms have a floor with a horizontal section, to promote their flexibility.
- The furniture to be introduced must be easily movable, in order to modify the internal distributions with agility, and adapt them to the pedagogical format that corresponds in each situation
- A factor to be valued by the UPNA is the use of bright colors, as a strategy of architectural differentiation
- It is necessary to undertake a study of rational and efficient use of existing classrooms, apart from continuing the process of qualitative transformation that has already begun; for this, it would be advisable to generate a structure of communication and meeting with the groups affected by the management of the spaces
- This could be translated into the elaboration of a study that would collect the main modalities of Teaching/Learning and their associated spatial typologies, incorporating references of excellence in national and international universities, related to the classroom scale.
- Likewise, it would be desirable for the UPNA to collect in a specific work structured information on the spatial characteristics of the classrooms, analyzing the multiple typologies in topics such as shape in plan, lighting, color and texture, limits, horizontal and vertical planes, as well as the comparison between traditional and innovative models.
- In coherence with what has been pointed out in the other scales, a planning and action exercise should be carried out aimed at promoting sustainability in classroom spaces: for this, it is advisable to elaborate a technical work in this regard, which also serves as a guide to link the criteria to be applied with the SDGs.

- The UPNA has to carry out tasks of sensitization to the university community about the possibilities of creative profitability of classroom spaces
- In order to properly plan and implement an optimization of all these issues, the UPNA should create an internal Commission, as part of its permanent management structure

6. Conclusions and global recommendations

The final section of the present document is centered in the elaboration of some conclusions and global recommendation for the Universidad Pública de Navarra (UPNA).

In spite of the local application of all the topics which have fed the general activities throughout the LTSHE Project, it must be remarked that most of these conclusions and global recommendations for the UPNA case could be somehow appliable as such recommendations to other universities. If so, it become relevant to underline that, as general criteria, they should be adjusted and adapted to the specific local circumstances of every single institution of HE.

In order to preserve the coherence and uniformity of the whole document, the present section follows as well the basic classification of L&T physical spaces:

1.-City scale

2.-Campus scale

3.-Building scale

4.-Classroom scale

Once inside, each epigraph (city, campus, building and classroom) includes the following internal organization of contents

A.-Conclusions

B.-Global recommendations - Strategic plans and actions

1.-CITY SCALE

- **A.-University-city relation conclusions**
    - The functional and physical synergies of the UPNA with respect to the city of Pamplona constitute a potential resource of great value, to mutually enrich both institutions
    - Since its implementation, the UPNA campus has favoured the progressive growth of the city and its facilities in its zonal environment
    - The UPNA must increase its visibility in the central urban area of Pamplona, implementing new information centers or points; this dynamic would symbolically reinforce the urban origins of the educational institution
    - In parallel, the active presence of the UPNA in socially disadvantaged urban environments could contribute to its requalification.

- As a specific situation, the groups consulted point out that the existing parking on the northwest edge (towards Avenida de Cataluña), generates a certain physical and visual barrier, not offering an adequate image of presentation of the UPNA with respect to its main access

- **B.-University-City global recommendations - Strategic plans and actions**
  - To enrich each other, the UPNA and the city of Pamplona should undertake a joint action planning, which would optimize the existing resources in both parts, and thus contribute to social and training improvement.

2.-CAMPUS SCALE

- **A.-Campus spaces conclusions**
  - The urban configuration shows an attractive assembly of architectural pieces, free spaces and trees, predominating environmental conditions of interest and a very positive pedestrianity
  - In general, there is an unbalanced polarization of the use of campus spaces, whose center of gravity resides in the place located between the Library and the Aulario
  - It is valued that the exterior spaces of the campus treasure a remarkable value, although they are not properly used; this interest derives from its potential use for teaching, relationship or rest functions
  - The central pedestrian axis that links the Library and the Rectorate is not adequately enjoyed as a space for relationship, study or stay
  - Although there are some testimonies at present, which are positively valued by the various groups, the presence of works of art on campus should be increased, as they provide an overlapping training resource
  - The groups consulted, especially the students, miss having adequate urban furniture, which induces a greater enjoyment of outdoor spaces

- **B.-Campus spaces global recommendations - Strategic plans and actions**
  - The UPNA could optimize the potential of the large central axis of the campus, so that it functions more effectively as a place of meeting, relationship, experience and study
  - It would also be advisable to integrate the banks of the Sadar River, for its landscape and experiential value
  - Globally, the UPNA would see its evolution improved if it undertook the elaboration of a Campus Master Plan, for which it is suggested to use the theoretical-practical tool of the "Educational Campus" and improve sustainability in its various meanings.

3.-BUILDING SCALE

- **A.-Building spaces conclusions**
    - A common opinion expressed by the groups consulted is that the buildings of the UPNA do not adequately make their spaces profitable, there are few places of relationship with adequate furniture
    - The Library is an exceptional case on campus, depending on its position in the whole, its dimensions and the typological solution of its internal spaces.
    - Spaces of relationship (corridors, halls) are partially present in the Aulario, as well as in the Sario building, located on the periphery of the campus
    - Due to the type of spatial composition (modular and repetitive) within the main buildings of the campus, situations of disorientation frequently occur in the face of its use by the university community, and very singularly by visiting groups.
- **B.-Building spaces global recommendations - Strategic plans and actions**
    - As a general recommendation, the UPNA should undertake a planning aimed at increasing interior spaces, properly furnished, that induce students to feel interested in staying longer on campus
    - The UPNA could consider the introduction of added compositional resources (such as the use of color) that help the orientation and differentiation of repetitive spaces
    - An effective strategy to mitigate the current difficulties of use would be to study the implementation of a color code superimposed on the interior plans of the campus buildings
    - As a universal strategy, the UPNA should seek a homogenization of the furniture that can be installed in spaces of social relationship, such as halls or corridors; as a singular case, the UPNA must continue the action already initiated to transform internal spaces in the Library building

4.-CLASSROOM SCALE

- **A.-Classroom spaces conclusions**
    - The classroom spaces of the UPNA buildings reflect, in general, a considerable uniformity in their configuration, predominating the classrooms of geometrically rectangular plan and moderate free height
    - The general furniture used is remarkably uniform
    - There is an excessive number of classrooms that show a lack of internal flexibility, but there have been recent spatial requalification actions, highlighting in that sense notable examples such as the Healthy Gela and the Classroom 026bis

- **B.-Classroom spaces global recommendations - Strategic plans and actions**
    - The UPNA must persevere in the progressive transformation of existing classrooms, in line with the actions already initiated
    - To enrich quantitatively and qualitatively the classroom spaces, the UPNA, the UPNA should elaborate a study that collects a taxonomy of innovative modalities of Learning & Teaching, reflecting the spatial typologies associated in each case, and its application in classrooms
    - Likewise, it would be advisable to undertake an organization of classrooms, so that a maximum ratio of students / teacher is not exceeded.
    - As an effective strategy, the UPNA should carry out training so that teachers increase the innovative profile in their work
    - It would be desirable to move towards a certain homogenization in the typologies of internal furniture in the classrooms
    - A study must be carried out in parallel to provide the UPNA Campus with classroom spaces where research activities are carried out
    - The UPNA has the Higher Center for Educational Innovation, which is called to provide criteria for qualitative transformation for classrooms, in terms of spatial innovation associated with education

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