

LTSHE

Learning and teaching space in higher education



Co-funded by the
Erasmus+ Programme
of the European Union

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/eplu-project-details/#project/2019-1-UK01-KA203-061968>
<https://www.evalag.de/ltshe>



Exploration of Policy and Practice: Learning and Teaching Space in Italy Higher Education

“National Report” by University of Milan (UNIMI) about policy and practice of designing L&T spaces in Italy higher education including institutional levels

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03 June 2021

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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Executive Summary

In Italy as in many other European countries, the almost total absence of national and local policies and specific regulatory frameworks for the design of teaching and learning spaces, is an element of great criticism, also considering how infrastructural needs can impact on a student centred educational approach and digitalization in T&L strategies. The LTSHE project captures how crucial this subject is to the future of the LTHE system. In this first report we focused on the complexity of Italian LTHE system, the current regulatory system for designing the L&T spaces and the guidelines and strategic plans of the most virtuous Italian public universities. As the document reports, the Italian University system is legally regulated directly by the Ministry of University and Research, which is the central institution that has the legislative and decision-making authority in order to coordinate all Higher Education Institutions nationwide. The national rules use as indexes for the quality of teaching and learning the spaces /students ratio, applying this parameter to class rooms, laboratories, spaces for self-learning and libraries. These indices must be met for accreditation of both curricula and for institutions, but because they are only dimensional, they only partially certify the quality of spaces. However, although each University is obliged to remain within the national regulatory framework, it also has the freedom to decide on the innovative strategies to be adopted in the field of L&T, including the design of learning spaces which, in the last years, have been increasingly included in the university's strategic plans. This indicates that the major effort in innovating the design of LTHE spaces to meet evolving instructional approaches is at the local level. This however results in uneven policies in LTSHE design. These differences should be overcome at the national level and possibly at the European level and the LTSHE project could give a contribute to this alignment.

As analysed in chapter 5, in recent years there have been increasing efforts on how to improve L&T focusing on spaces. The main aspects analysed concern the flexibility of spaces to meet the innovative dynamics in the field of teaching, learning and work organization as well as the need to respond to the most advanced teaching methodologies and future opportunities offered by information technology. Spaces for the self-study activities in addition to being highly versatile to accommodate different configurations of use, should also aim to enhance social relations and the knowledge exchange. In the same chapter it is also reported an example of good practice to overcome the traditional institutional separations of directions responsible for didactics planning, building design and multimedia technologies. In our university, the close collaboration between the Building Direction, the Functional Centre for Innovative Didactics and Multimedia Technologies and ICT direction allowed drawing up of a Guidelines Document that will be applied in the realisation of all the learning spaces, both new buildings and refurbishments.

From our, albeit incomplete, analysis of the policies regarding L&T spaces in the Italian higher education system we can conclude that it is now a common thought that the issue of L&T spaces can no longer be neglected. Several Universities have planned to invest resources to address the problem of L&T spaces by setting up commissions which, with the help of external consultants, have the task of better defining existing and future L&T spaces. What is lacking is action at central level to establish a national policy for the design of learning and teaching spaces and to set standards including for their use for in accreditation procedures.

Based on these considerations two lines of action should be defined, one coordinated by the CRUI (association of the Rectors of Italian public and private universities) aimed at the monitoring and sharing of the good practice of the different HE Institutions in the design of L&T spaces, also considering the needs for innovative approaches in digital teaching, and the second in charge to the Ministry aimed at define national guidelines and common standards for the design of LT spaces to identify a general framework and overcome the current differences among the different institutions.

1. Introduction

Here we present the Intellectual Output 01 of the LTSHE project with the aim to explore the policy and practice of designing and implementing learning and teaching (L&T) spaces in Italian higher education. We focus on the practice adopted by the public universities and deeply explore the legal context.

The Italian university system is legally regulated directly by the Ministry of University and Research, which has legislative authority and the competence to define guidelines. However, although each university is obliged to remain within the national regulatory framework, it also has the freedom to decide on the innovative strategies to be adopted in the field of L&T, which, in the last years, have been increasingly included in the university's strategic plans.

For this reason, we first carried out a detailed review of existing legislation, guidelines and strategic plans of the most virtuous Italian public universities. From this analysis, as can be seen in the chapter dedicated to the bibliography, it emerges that the legislation concerning the architectural definition of university spaces dedicated to L&T is on average old and the most recent documents date back not less than two decades. More recent legislation concerns the safety of structures and infrastructural requirements for the removal of architectural barriers, thus guaranteeing access for the disabled. For new buildings, legislation aims to guarantee a minimum environmental impact and eco-sustainable structures. What has clearly emerged from the analysis of regulatory aspects is that in the Italian system what most makes the difference for the development of L&T infrastructures are the guidelines developed by each single university.

On the basis of this premise, we decided to address this intellectual output project with a second paragraph, following the introductory one, aimed at framing the problem related to the lack of general guidelines characterised by an innovative and continuously updated vein that are necessary in order to better follow and support a continuously evolving field of L&T. In this paragraph we not only wanted to highlight the Italian lack of this type of recommendation, but also how the problem is common to other European and non-European countries. Subsequently, in the third paragraph, we have described in detail the strategy and methodology we have followed to draw up our intellectual output 01. In chapter 4, we have reported the actual state of the Italian L&T with a precise description of the organisation of the Italian university system and of its student population. In the same chapter we have also addressed the impact and importance of digitalisation in L&T, with particular attention to the current pandemic moment. We also emphasised a very important item related to the quality control of L&T carried out by the national evaluation agency of the university and research system (ANVUR). The concluding paragraph of chapter 4 is about the current state of L&T spaces in Italian universities, which serves as a link to chapter 5 where we reported the prospective vision of the Italian guidelines on how to conceive the new development plan of spaces dedicated to L&T in public universities, using the campus Einaudi of the University of Turin as an example for newly designed buildings and the Functional upgrading of Law and Humanities libraries in the historical central building of the University of Milan, as an example for requalification and technical modernisation of study and learning spaces

The last chapter is dedicated to the conclusions, where it clearly emerges the importance of defining a common plan and strategy to define the best practice to be adopted in the design of spaces dedicated to L&T, a particularly useful strategy in the Italian context to try to bridge the gap between the north and the south of our country.

2. Some conceptual foundations and clarifications

The challenges that learning and teaching system in higher education is facing and will have to face with in the future, make as a priority the analysis of the policies that the European Countries are adopting to the definition and design of infrastructures capable of adequately support them. 21 years later the Bologna declaration which identified the operational goals for a common vision/system of a European Higher Education Area, the European cooperation in defining the good practices in terms of structures and processes for promoting excellence in teaching and learning is almost absent even if pivotal for a student centered approach. This probably reflects a high heterogeneity in the policies, if present, for spaces as well as the use of technological innovations in learning and teaching in higher education. This actually emerges from the various documents issued by the other members of the LTSHE and from the analysis we present on the Italian scenario.

Until now, one of the main problems lies in the reduced organizational skills and innovative development of both spaces and educational approaches. In the Italian context, the lack of clear and univocal national guidelines has left the decision-making processes on these issues within the university autonomy. This aspect has generated a strong diversity among the different Italian Universities both concerning the governance and the strategies for LTSHE.

For this reason, we have decided to assemble this report considering an average of what the Italian University scenario is, in order to represent an overall view of all the interventions adopted, or planned to be adopted, to improve learning and teaching in Italian Universities.

Within the LTSHE project, this analysis and the identification of specific good practices in individual Institutions could contribute, together with the documents of other partners, to develop a common frame for the design and implementation of L&T spaces.

3. Methodology

To prepare the present report we have used a mixed methodology based on literature search of the available documents on the legislation, policy, and strategic plan of the Universities regarding the L&T spaces in the Italian Higher Education context. Considering the centrality in making-decision of the Ministry of the University and Research (MUR), we consulted all the official documentation available on the MUR website

For the strategic plan of the universities, we used the information available in their websites since they are documents open to the population. In order to make sure not to overlook further relevant sources, especially in term of spaces and legislation, we also interviewed architects of the University of Milan Construction Division, such as:

Arch. Peppino D'Andrea (head of the Construction division)

Arch. Cesare Merluzzi (head of the Planning sector, branch of the Construction division, and of the Campus Mind office)

Arch. Mario Scaglia (head of the Office for Major Building Works, branch of the Planning Sector)

Mr. Federico Motta (MIND Campus office)

Mr. Marco Aloe (Planning sector)

Finally, part of the information on the university spaces and their planning derive from two dedicated books specified in the bibliography paragraph.

4. National policy and practice for the design and implementation of L&T space in Italy higher education

4.1 Italian organizations involved in the administration of the University system

The Ministry of University and Research (MUR) is the central institution that has the legislative and decision-making authority in order to coordinate all universities nationwide.

In particular, the Ministry carries out the functions pertaining to the State in the following functional areas:

- tasks of guidance, programming and coordination of national scientific and technological research;
- planning of interventions, direction and coordination, general regulation and financing of universities and institutions of high artistic, musical and dancing training(AFAM);
- definition of outlines for higher education programs;
- enhancement of merit and ensuring the right of higher education;
- rationalization of the conditions to access to higher education;
- Involvement in the procedures controlling the access to public administrations and professions, the connection between university education, school education and training;
- European harmonization and international integration of the university system and AFAM also in implementation of cultural agreements stipulated by the Ministry of Foreign Affairs and International Cooperation;
- coordination and supervision of non-instrumental research bodies and institutions; completion of university autonomy;
- enhancement and support of free research in universities and research bodies; integration between applied and public research;
- coordination of Italian participation in national and international research programs;
- support for space and aerospace research;
- scientific cooperation at the national community and international level; promotion and support of business research, including the management of a special fund for incentives, also with reference to depressed areas and integration with public research;
- financing of research infrastructures, including in the form of the European Research Infrastructure Consortium (ERIC) as per Council Regulation (EC) no. 723/2009 of 25 June 2009;
- operational programmes financed by the European Union; financing of private research bodies and activities for the diffusion of scientific culture.

Moreover, starting from the 2004 the MUR had set-up the national register of students and graduates (ANS). The establishment of ANS by the MUR marks an important step for the university system because, for the first time, a complete database on students' careers has been created in order to pursue the important cognitive objectives in support of national and international monitoring and evaluation activities of the higher education system.

In the framework of the indications established by the MUR, the individual universities have autonomy in the planning of teaching programmes, the design of spaces and the recruitment of teaching, administrative and research support staff.

In addition to the MUR and local institutions, the Italian university system also includes several actors with complementary functions of particular importance for the development, comparison, evaluation and, more generally, the organization of the university system.

Among these, the most relevant are the National Agency for the Evaluation of the University System and Research (ANVUR), the National University Council (CUN), the Conference of Italian University Rectors (CRUI), the National Council of University Students (CNSU).

These institutions play a key role in monitoring and define a common line for the best practise, especially in terms of the L&T. Here in summary the role of each of them is described.

ANVUR is the agency that carries out the evaluation of the university and research system on the basis of the guidelines defined by the Ministry. It proposes criteria and indicators for the evaluation of the higher education and research system and for the accreditation of Institutions and Education programmes. ANVUR operates according to the principles of independence, impartiality, professionalism, transparency and is supervised by the MUR. The Agency has its own organization, headed by the President, who is elected within the Board of Directors of the Agency, which consists of 7 members appointed by the President of the Republic, upon proposal of the Minister, after hearing the competent parliamentary commissions.

CUN is an advisory and propositional board for the Minister of University and Research. It is composed by 42 professors elected as representatives of the fourteen disciplinary areas, 3 members elected as representatives of the technical-administrative staff of the universities and 13 members designated by the other components of the university system. As an elective institution representing the university system, it expresses mandatory opinions on the Minister's main acts and on the allocation of resources. It also formulates proposals, adopts motions, recommendations, carries out study and analysis on any subject of interest for the university system.

CRUI is the association of the Rectors of Italian public and private universities. Over the years, the CRUI has acquired an increasingly recognized institutional and representative role for the university system. In addition to coordinating and disseminating best practices among university institutions, the CRUI expresses mandatory opinions on the Minister's main acts concerning the system and the allocation of resources.

The CNSU is the advisory organ to the Minister for issues related to students enrolled in all programmes activated in public and private universities: undergraduate, graduate and postgraduate students. It is composed of 28 members elected by the undergraduate and graduate students, one member elected by those enrolled in specialization programmes and

one by those enrolled in PhD programmes. It formulates mandatory opinions on policy and distribution of resources and prepares, every two years, its own Report on the condition of students. It proposes further contributions with respect to student-related issues, through its own opinions and motions.

4.2 The Italian system of higher education

The Italian system is the oldest one in the world as the first university as a free, secular, student-funded system of higher education (studium) was founded in Bologna in 1068 and 6 out of 12 institutions founded from the 1000s to the 14th century are universities still active in Italy.

The development of the university system, since the age of “the Italy of the Commons”, has given great impulse to the autonomous improvement of individual universities, but has been and continues to be a critical element in the creation of a truly integrated and coordinated system at central level.

At the present, the Italian university system consists of (Table 1):

- 67 Public Universities
- 19 legally recognized private universities
- 11 legally recognized private telematics universities.

The establishment of a new university is regulated by Italian law through the accreditation process. This process is aimed at verifying and certifying the presence of certain minimum requirements in terms of the order of studies, transparency, recruitment of professor, structural conditions and economic and financial sustainability. A special Ministerial Decree states the accreditation of the structure. In order to ensure over time the maintenance of these requirements, the law 240/2010 provides for a process of periodic accreditation of Sites and educational programmes, the internal organization, the quality of teaching and research of all the Institutions present in the Country . The periodic accreditation process is performed by the ANVUR through the analysis of the university's results and the on-site visits carried out by the Commissions of Evaluation Experts (CEV). The final evaluation places each university in one of the following classes of merit: very positive, fully satisfactory, satisfactory, conditional, unsatisfactory.

The internal organization of the University is defined by the Law 240/2010 for the following subjects:

- 1) Rector;
- 2) Academic Senate;
- 3) Board of Directors;
- 4) Board of Auditors;
- 5) Independent Evaluation Unit;
- 6) General Director

The rector is the legal representative of the University and defines the direction, initiative and coordination of scientific and didactic activities; the responsibility for the pursuit of the aims of the university according to quality criteria and in compliance with the principles of effectiveness, efficiency, transparency and promotion of merit.

The Academic Senate has among its functions: to formulate proposals and mandatory opinions on teaching, research and student services; activation, modification or suppression of courses, locations, departments, facilities; to approve the rules of the university; to approve the regulations, including those within the competence of departments and facilities, on teaching and research, as well as the ethics code of the university.

The Board of Directors has the functions of approval of the annual and triennial financial planning and of personnel, as well as of supervision of the financial sustainability of the activities; of the competence to deliberate, after hearing the opinion of the Academic Senate, the activation or suppression of courses and locations; of the competence to adopt the regulation of administration and accounting upon proposal of the Rector and after hearing the opinion of the Academic Senate, for the aspects of its competence; to approve the annual and triennial budget.

The Board of Auditors is responsible for the control of the University's accounts and is composed of three active members and two substitutes, one of whom is an active member, acting as president, chosen from among administrative and accounting magistrates and lawyers of the State. This Board has a mandate for a maximum of four years.

The Independent Evaluation Unit verifies the quality and efficacy of the didactic offer, of the research activity carried out by the departments, of the activities carried out by the structures and by the personnel, in order to promote in the universities, in full autonomy and with its own organizational modalities, the merit and the improvement of the organizational and individual performance.

The General Director, on the basis of the guidelines provided by the Board of Directors, is responsible for the overall management and organization of services, instrumental resources and technical-administrative personnel of the University.

On the frame of the articulation of the programmes, the university system is inspired by the Bologna Declaration. Starting from 1999 was generated European Higher Education Area based on principles and criteria shared by the signatory countries, such as:

- the introduction of a system of comprehensible and comparable degrees, based as far as possible on a three-cycle system of first, second and third level
- the transparency of programmes of study through a common system of credits, based not only on the duration but also on the workload of the individual course and the related learning outcomes, certified through the Diploma Supplement
- the recognition of qualifications and periods of study
- a shared approach to quality assurance

- the implementation of a shared qualifications framework aimed at the European Higher Education Area.

Based on these criteria, the university system in Italy was subjected to various stages of reform, with the aim of making the structure, organization and university systems responsive to the needs posed not only by educational purposes, but also with an effective link with the various sectors of work, in harmony with the directives and guidelines of EU policies.

The regulatory and structural framework currently in force for the Italian university was defined with the approval of the so-called Bassanini 2 law (Law 127 of 1997), which reformed the university system, adapting it to the standards of European countries. With Ministerial Decree 509/99 and 270/04, the current configuration of the university system was defined. General criteria have been identified, on the basis of which each university has been able to outline, in full autonomy, its programmes of study. The didactic regulation of the university is, in fact, the instrument that determines and regulates the procedure for the approval of study programmes. In particular, the didactic regulations of programmes define the name, the objectives of the study programme, the general framework of the educational activities, the credits recognized for each educational activity and the characteristics of the final test that entitles the student to obtain the degree.

The Degrees established by current regulations are divided according to precise categories:

- Bachelor's Degree is the first level of university education. Its objective is to assure the student an adequate knowledge of general scientific methods and contents, even when he/she is oriented towards the acquisition of specific professional skills.
- Master's Degree is at the second level of university education. It aims to provide students with an advanced level of training, for the exercise of highly qualified activities in specific areas. The duration of the course is 2 years.
- The single-cycle Master's Degree Course is characterized by an overall duration fixed at 5 or 6 years. This category includes courses that, in line with the standards of the European Union, do not include the possibility of three-year degree courses. The courses of Medicine and Surgery, Dentistry and Dental Prosthetics, Veterinary Medicine, Pharmacy, Chemistry and Pharmaceutical Technology (CFT), EU Architecture and Construction Engineering - Architecture and Law are part of this group.
- The Vocational Master's degrees are locally planned programmes divided into two different types: the first-level Master's degree, which has a total duration of 1 year and requires a degree as admission qualification, and the second-level Master's degree, for which the possession of a Master's or Specialist degree is required.
- The Specialization programmes have the aim of providing students with knowledge and skills for functions required in the practice of particular professional activities and can only be established in application of specific legal provisions or European Union indications. Their duration is defined by the didactic regulations of the course or by European directives. It concerns courses of study related to medical specialties, legal professions, training for secondary school teachers. To be admitted to a course of

specialization it is necessary to be in possession of a Master degree, the title issued is that of Specialist.

- The PhD has a duration of 3 or 4 years. Starting from the academic year 1999/2000, PhDs are established and announced by universities and university institutes, in their full organizational, educational and scientific autonomy. The qualification needed for admission is the Master Degree. The title awarded is that of Doctor of Research.

In the Italian higher education system are comprised also the High Artistic Musical and dancing Education (AFAM). The AFAM system is constituted by the state conservatories, the Academies of Fine Arts (state and non-state), the former music institutes promoted by local authorities, the state academies of dance and drama, the state institutes for artistic industries. The titles released are equivalent to university degrees, they are members of the higher education system, and for this reason they are defined at the "university level". Currently, the educational offer includes: courses of study of the 1st cycle (first level courses), at the end of which a title "Diploma Accademico di primo livello" (DA1) is issued; courses of study of the 2nd cycle (second level courses), with the release of a title "Diploma Accademico di secondo livello" (DA2); courses of study of the 3rd cycle (research training courses).

Table 1: List of the of the Italian University active until 2020

Type of institution	Name of the University	Italian Region
Public	Università degli studi di Torino	Piemonte
	Politecnico di Torino	Piemonte
	Università degli studi del Piemonte orientale "Amedeo Avogadro"	Piemonte
	Università degli studi di Genova	Liguria
	Università degli Studi dell' Insubria	Lombardia
	Università degli Studi di Milano	Lombardia
	Politecnico di Milano	Lombardia
	Università degli Studi di Milano - Bicocca	Lombardia
	Università degli Studi di Bergamo	Lombardia
	Università degli Studi di Brescia	Lombardia

	Università degli Studi di Pavia	Lombardia
	Istituto Universitario di Studi Superiori di Pavia	Lombardia
	Università degli Studi di Trento	Trentino-Alto Adige
	Università degli Studi di Verona	Veneto
	Università degli Studi Ca' Foscari di Venezia	Veneto
	Università luav di Venezia	Veneto
	Università degli Studi di Padova	Veneto
	Università degli Studi di Udine	Friuli-Venezia Giulia
	Università degli Studi di Trieste	Friuli-Venezia Giulia
	Scuola Internazionale Superiore di Studi Avanzati di Trieste	Friuli-Venezia Giulia
	Università degli Studi di Parma	Emilia-Romagna
	Università degli Studi di Modena e Reggio Emilia	Emilia-Romagna
	Università degli Studi di Bologna	Emilia-Romagna
	Università degli Studi di Ferrara	Emilia-Romagna
	Università degli Studi "Carlo Bo" di Urbino	Marche
	Università Politecnica delle Marche - Ancona	Marche
	Università degli Studi di Macerata	Marche
	Università degli Studi di Camerino	Marche
	Scuola IMT Alti Studi di Lucca	Toscana

	Università degli Studi di Firenze	Toscana
	Istituto Italiano di Scienze Umane di Firenze	Toscana
	Università degli Studi di Pisa	Toscana
	Scuola Normale Superiore di Pisa	Toscana
	Scuola Superiore di Studi Universitari e Perfezionamento "S. Anna" di Pisa	Toscana
	Università degli Studi di Siena	Toscana
	Università per Stranieri di Siena	Toscana
	Università degli Studi di Perugia	Umbria
	Università per Stranieri di Perugia	Umbria
	Università degli Studi della Tuscia	Lazio
	Sapienza - Università di Roma	Lazio
	Università degli Studi di Roma Tor Vergata	Lazio
	Università degli Studi di Roma "Foro Italico"	Lazio
	Università degli Studi Roma Tre	Lazio
	Università degli Studi di Cassino e del Lazio Meridionale	Lazio
	Università degli Studi del Sannio	Campania
	Università degli Studi di Napoli Federico II	Campania
	Università degli Studi di Napoli - Parthenope	Campania

	Università degli studi L'Orientale di Napoli	Campania
	Seconda Università degli Studi di Napoli	Campania
	Università degli Studi di Salerno	Campania
	Università degli Studi di L'Aquila	Abruzzo
	L'Aquila - Gran Sasso Science Institute	Abruzzo
	Università degli Studi di Teramo	Abruzzo
	Università degli Studi Gabriele D'Annunzio di Chieti e Pescara	Abruzzo
	Università degli Studi Gabriele D'Annunzio di Chieti e Pescara	Abruzzo
	Università degli Studi del Molise	Molise
	Università degli Studi di Foggia	Puglia
	Università degli Studi di Bari	Puglia
	Politecnico di Bari	Puglia
	Università del Salento	Puglia
	Università degli studi della Basilicata	Basilicata
	Università della Calabria	Calabria
	Università degli Studi di Catanzaro - Magna Grecia	Calabria
	Università degli Studi Mediterranea di Reggio Calabria	Calabria
	Università degli Studi di Palermo	Sicilia
	Università degli Studi di Messina	Sicilia

	Università degli Studi di Catania	Sicilia
	Università degli Studi di Sassari	Sardegna
	Università degli Studi di Cagliari	Sardegna
Private	Università di Scienze Gastronomiche	Piemonte
	Università della Val D'Aosta	Val D'Aosta
	Università "Carlo Cattaneo" (LIUC)	Lombardia
	Università Commerciale Luigi Bocconi di Milano	Lombardia
	Università Cattolica del "Sacro Cuore"	Lombardia
	Libera Università di Lingue e Comunicazione (IULM)	Lombardia
	Libera Università Vita-Salute San Raffaele di Milano	Lombardia
	Humanitas University	Lombardia
	Libera Università di Bolzano	Trentino-Alto Adige
	Libera Università Maria SS.Assunta - (LUMSA) di Roma	Lazio
	Libera Università Internazionale degli Studi Sociali Guido Carli - (LUISS) di Roma	Lazio
	Università Campus Bio-medico di Roma	Lazio
	Università degli Studi Internazionali di Roma – UNINT	Lazio
	Università Europea di Roma	Lazio
Universitas Mercatorum di Roma	Lazio	

	Link Campus University di Roma	Lazio
	Saint Camillus International University of Health	Lazio
	Università degli Studi Suor Orsola Benincasa di Napoli	Campania
	Libera Università Mediterranea Jean Monnet	Puglia
	Università per Stranieri "Dante Alighieri" di Reggio Calabria	Calabria
	Libera Università della Sicilia Centrale "KORE" di Enna	Sicilia
Private/Telematic	Università telematica "e-Campus" di Novedrate (CO)	Lombardia
	Università telematica "Italian University line" di Firenze	Toscana
	Università telematica Guglielmo Marconi di Roma	Lazio
	Università telematica Unitelma Sapienza di Roma	Lazio
	Università telematica internazionale UNINETTUNO di Roma	Lazio
	Università telematica Niccolò Cusano di Roma	Lazio
	Università telematica "San Raffaele" di Roma - già "UNITEL"	Lazio
	Università telematica "Giustino Fortunato" di Benevento	Campania
	Università telematica "Pegaso" di Napoli	Campania

	Università telematica non statale "Leonardo da Vinci" di Torrevecchia Teatina (CH)	Abruzzo
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4.3 The numbers of the Italian Higher education system

The following paragraph provides an overview of the Italian university population in terms of both students, professors and support staff, updated to the most recent census report of 2018.

The Italian university system employs 98.461 teachers, 29% of whom are on contract, and 55.720 support staff.

Different are the numbers related to the student population where the total number of students enrolled is around 1.700.000. Every year about 278.000 students matriculate and more than 300.000 obtain their degrees. The distribution of students within the three levels of instruction is the following: approximately 1.000.000 are the students enrolled in first level degree, 316000 in second level degree and 312000 in single cycle degree. It is important to underline that the reduced number of students in single cycle degree is due to the limitation in the number of students enrollable in the programme.

With regard to post-graduate programmes, specialization schools enrolled 26618 students, first- and second-level vocational master's programs 32959, and PhD programs 28635.

An important but not yet sufficient effort to guarantee the right to study, granted by the Ministry of University and Research and by the territorial authorities, has allowed more than 360.000 students (economically disadvantaged) to benefit from scholarships. This allows to fully cover university fees, that amount, on average, to 1600 euros per year.

The proportion of enrolled students of foreign nationality is growing, but it is still very low in comparison with international benchmarks, indicating two distinct problems: the university system's lack of attractiveness to foreigners and immigrant families have difficulties in guaranteeing children the continuation of studies.

4.4 Digitalization in higher education

The enhancement and development of skills and professionalism of faculty and the modernization of teaching methodologies by a digital approach are a priority not only of the Ministry of University and Research but also of the entire government that aims to allocate an important part of Recovery Plan (PNRR) in the process of digitisation of the entire country.

These activities aim to encourage the dynamic participation of students, for a better acquisition of knowledge and for the development of skills necessary to address future professional challenges. The health emergency of the first semester of 2020 showed a great dynamism of Universities to operate in new ways and a substantial appreciation of the students for how the emergency was addressed.

The objective for the near future is to propose training initiatives for faculty. The training proposal will aim to build basic skills related to multimedial-based educational design, providing knowledge on its pedagogical aspects, promoting experiences for the management of methodological and technological approaches to monitor and evaluate student learning, providing information on bibliographic resources available to support teaching.

Alongside the basic training activities, interventions are planned to be targeted to the specific purposes of the courses and the needs of individual professors.

Moreover, the experience gained through the activities carried out within League of European Research University (LERU) plays an important role for all the point mentioned before.

An important goal is to consolidate and make permanent the effort made during the health emergency in terms of new digital opportunities for learning by expanding the educational offerings of courses.

e-Learning projects will be identified and pursued, both asynchronous (online courses designed to enhance, nationally and internationally, the leading skills of the universities, as well as to reach new categories of students unable to attend daily), and synchronous (distance learning to allow the simultaneous use in real time of lessons in different locations of the University).

In this area, it is intended in particular to proceed with the testing of cutting-edge communication technologies (concrete and current examples: 5G connections for the use of distance learning in mobile contexts, multimodal human-computer interaction, use of Artificial Intelligence techniques as a support to the online assessment of the skills acquired by students).

4.5 Importance and status of didactics, pedagogy and curriculum design in Italian higher education

Up to now in Italy, there is no strategic document focusing exclusively on pedagogy or didactics .

In Italy, as previously described, there is only one agency, ANVUR, which operates through a system based on a model of Quality Assurance (AQ) strictly adherent to the European standards for internal and external quality assurance (ESG), called Self-Evaluation - Periodic Evaluation - Accreditation (AVA).

ANVUR is at the service of universities by providing a set of tools and indicators useful for self-evaluation.

AQ plays a central role in the Bologna process, which aims to increase the quality and accessibility of tertiary education and to facilitate the international mobility of students and faculty by creating a European Higher Education Area (EHEA).

In particular, the adoption of common ESG and the presence of national agencies with shared goals and evaluation methodologies allow to balance transparency and mutual recognition with the heterogeneity of education systems and institutions within the EHEA.

In Italy, the first experience of university evaluation can be referred to the 2001 with the CampusOne project, which was managed by the Conference of Italian University Rectors (CRUI). The aim of this project was to support universities in the process of implementing educational reform, with a methodology for evaluating courses of study in line with the international evaluation systems that existed at that time (e.g., in the United Kingdom), which already provided for the two complementary phases of self-evaluation and external evaluation. The first phase was carried out within the structure responsible for the course of study by a self-evaluation group set up for the purpose; the second was carried out according to the method of peer review by a group of external experts (university lecturers and experts).

AQ was formally introduced in our country with Law 240/2010 and with the establishment in 2011 of the ANVUR. In 2013, the Agency defined a national evaluation system based on a AQ model strictly inspired by ESGs called AVA, whose framework has been shaped in the following years also following the 2015 ESG update.

The AVA system, described in the ANVUR guidelines for the periodic accreditation of university centers and programmes, aims to strengthen the system of self-evaluation of the quality and effectiveness of teaching and research activities of universities, and provides for the conduct of a periodic external evaluation and initial and periodic accreditation procedures of both programmes and university centers.

With reference to self-assessment, the AQ system wants to adapt the AVA Guidelines, like the ESG to the different contexts in the country. This does not provide stringent requirements but asks institutions to define their internal processes in a transparent way and to implement them effectively. External evaluation, similarly to what happens routinely in EHEA countries, takes place through peer review and focuses on the adequacy of the internal AQ system.

The AVA system shares many features with other European experiences: for example, as in France, evaluations do not produce direct financial consequences but only "reputational" ones; as in the UK, the focus is on institutions, which are responsible for the quality of the educational offer provided by the courses of study (CdS). In fact, the AVA system foresees, in the accreditation phase, a sample evaluation of courses and departments (or equivalent structures) to judge the overall implementation of the internal AQ system by the university.

A peculiar feature of the Italian system is, however, the presence of three distinct internal structures responsible for the operation of AQ: independent evaluation unit (NdV), possibly a university quality control (PQA) and one or more faculty-student joint committees (CPDS).

The NdV defines the general methodology of the AQ of the university and performs the related evaluation functions. The PQA oversees the AQ procedures by performing functions of connection and verification. The CPDS, composed of an equal number of teachers and students, are the structures "closer" to the student part, they play a role of "listening" to the critical issues and can make proposals for their overcoming addressed to the NdV, the PQA and the student parts.

Accreditation processes are based on evaluation activities carried out by commissions of evaluation experts (CEV), whose results propose accreditation or not (initial or periodic). Accreditation recognizes the possession (initial accreditation) or permanence (periodic

accreditation) of the quality requirements that make a university or a school suitable for carrying out its institutional functions.

As is the case of Germany, accreditation in our country can be "conditional" and have a reduced duration, at the end of which a verification of the overcoming of the critical points which have "conditioned" accreditation is requested.

4.6 Importance and status of physical L&T space in Italian higher education

Because of the highly differentiated character that distinguishes the Italian universities, it is particularly difficult to establish whether in Italy a specific direction has been adopted in the type of location and architectural solutions used.

In spite of the experience gained so far, especially thanks to the interaction with international partners, there is still a high level of uncertainty in the planning and programming activities of the university system. This is caused by the extreme diversity of reference models and, by the missing of specific rules on structure planning. In particular, for the design of new buildings and the adaptation of existing ones the technicians are forced to refer essentially to the standards for public buildings and to those that contain special requirements for public places of entertainment.

Also the territorial organization of Italian universities is extremely variable. In general, university sites are distributed within the city, with the formation of "university towns". The larger universities spread out further into the urban context, identifying sites in specific areas where research and teaching are firmly integrated into the context. In addition to these realities, the concept of university campuses is increasingly emerging, based on the English and American models, which do not include all disciplines, but are generally either humanistic or scientific. In particular, there is a tendency to maintain humanistic faculties in historical centres and to delocalize scientific faculties in areas of urban expansion. To note, contrary to what has been emerged from other partners involved in this project, in Italy university buildings are in part state property given in concession to individual universities and in major part in charge and owned by the single university. This is another aspect contributing to have a heterogeneous scenario in term of the L&T spaces in Italian higher education system.

In these context, one of the benchmarks used to define the quality of teaching and learning is the ratio sqm/ student, where the sqm comprises classroom, laboratory and spaces for self-learning. The European standard indicates 20 sqm per student, while the data provided by the Italian MUR indicate 40-100 m³ per student, which is not very informative.

The review of the Italian situation clearly shows that the current space endowments of Italian universities are definitely deficient, averaging from 10 sqm per student to less than 3 sqm per student.

As frequently happens also in other European countries, surface area standards per student are often divided for subject area, and in general humanistic degree have less sqm/student with respect to scientific degree.

Regarding the dimension of the classrooms, it depends on the groups of fruition, the type of activity they host (didactic seminars, exercises, exams, etc.) and the levels of furniture foreseen.

In general, the Italian universities adopt the following strategy for the unequipped classrooms:

- classrooms with 6 seats, with area of about 25 sqm
- classrooms with 10-15 seats, with areas ranging from 40 to 50 sqm
- classrooms with 40 seats, with areas ranging from 65 to 90 sqm
- classrooms with 60, 90, 120 seats, with area of about 110 sqm
- classrooms with 150 seats, with area of about 130 sqm
- classrooms with 200 seats, with area of about 175-300 sqm
- classrooms with 300 seats, with area of about 250-430 sqm
- classrooms with 500 seats, with area of about 450-500 sqm

The furnishing foreseen for these classrooms is minimal and generally composed of a desk and blackboard/projector clearly visible to all and a desk for taking notes. The measures adopted are mainly aimed at minimizing possible occasions of disturbance during the lessons and for this reason, the maximum number of seats per row recommended is:

- 10 in the case of classrooms destined for 50-100 users
- 12 in the case of classrooms destined for 100-200 users
- 15 in the case of classrooms destined for 200-300 users

Whereas, different is the size of equipped classrooms. These are intended for practical-theoretical activities used by most of the degree courses as best practise of L&T in Italian (higher)education system.

Also in this case the scenario is very variable and can be grouped only by major categories:

- laboratories for scientific practice of wet type able to contain 20 students have an average size of 90-110 sqm; for 40 students 165-200 sqm; for 60 students 230-270 sqm.
- computational laboratories: for 20 students 85-100 sqm for 40 students 165-190 sqm; for 60 students 230-260 sqm.
- languages laboratories: for 20 students 40-55 sqm for 30 students 55-70 sqm; for 40 students 70-90 sqm.
- the classrooms for graphic exercises (drawing and design), arranged to contain drafting machines and drawing boards: for 20 students 145-170 sqm for 40 students 265-295 sqm; for 60 students 380-420 sqm.

In addition to these, very important are also the classrooms dedicated to self- study activities with an average content of 60 students and size 65-80 sqm.

5. University policy and practice for the design and implementation of L&T space in Italy higher education

Universities have a central role in L&T higher education in Italy, as producers, processors and transmitters of knowledge. From the beginning, the model of production and transmission of knowledge in the university has conditioned the planning choices for the university buildings and the design of learning spaces as well. Thus, Universities were generally designed as enclosed places often housed in prestigious and authoritative buildings; classrooms designed to accommodate a large number of students allowing everyone to have a visual relationship with the teacher, the blackboard and any other useful equipment for teaching. The most commonly adopted solution was the amphitheatre classrooms. The most significant examples of the study of functional spaces for specific teaching purposes are the anatomical theatres designed as early as the 16th century. The Teatro Anatomico of the University of Padua, completed in 1595, is the first example in the world of a permanent structure created for teaching anatomy through the dissection of cadavers; it was followed in the next century by the design of the anatomical theatre of the University of Bologna.



Figure 1: The Teatro Anatomico of the University of Padua

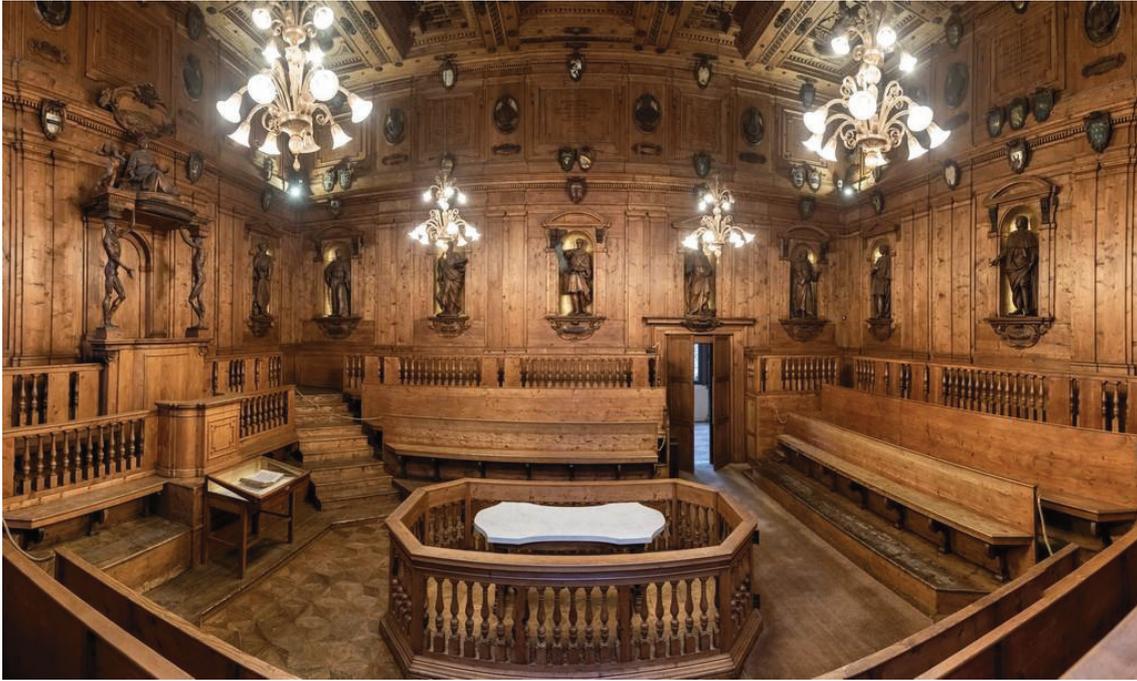


Figure 2: The anatomical theatre of the University of Bologna

Today we know how fundamental integration with the local territory and civil society is for the university. This integration also depends on the use of spaces, particularly those dedicated to study, beyond their use in L&T. This integration, in addition to space sharing, also has a key element in the application of modern T&L methodologies, especially considering the impact of digitisation in education. This opens a new scenario in the area of learning space design. The challenge now is how to adapt to new concepts of LTSHE the existing places and spaces of universities and on the other hand how to build the new ones.

Unfortunately, also in this case there aren't any national and European mandatory rules, but only wide guidelines reported in the following paragraph. Consequently, the design of buildings, teaching rooms and learning spaces remains in the responsibility of the individual universities. In general, each university describes its intentions in this regard in the university's strategic document. The Strategic Plan is the three-year planning document that outlines the university's mission, strategic directions, and goals. Some, but not most, Universities identify pro-rectors or delegates of the Rector to coordinate both university building activities and faculty development projects.

In recent years there have been increasing numbers of strategies on how to improve L&T with particular regards for the spaces.

5.1 Dynamism of spaces

The innovative dynamics in the field of teaching, learning and work organization in general, as well as the evolution of the needs of the Universities, have constantly changed both in the short, medium and long term. For this reason, the project of new spaces needs the adoption of highly flexible criteria.

Therefore, the issue of flexibility must be approached from multiple perspectives:

- structurally: through, for example, the adoption and sizing of structures suitable for different uses;
- in terms of distribution of the space: the adoption of building projects that allow a high variability of possible configurations, making feasible processes of reversibility over time between different types of spaces.
- in terms of construction and installation: with plant equipment that can be inspected and easily expanded and integrated (thanks, for example, to advanced initial arrangements, spaces intended for dimensionally scalable installations, etc.); delimitation elements and mobile spatial articulations (mobile walls, steps, integrable false ceilings, changeable lighting systems, etc.);
- innovation: the new generations of students who have grown up with the web (the so-called millennials), require a design of spaces that also reflects the "real-time connected" nature of the web. Developers should prepare personalized and customizable learning environments. Indeed, student centered approach of Higher education, requires increasingly experiential, immersive and social places with constant access to learning materials and resources;
- accessibility: new buildings must be designed according to the criteria of maximum accessibility for people with motor and sensory disabilities. In particular, all ways and accesses have to be designed to favour wheelchair users, also dimensioned to make possible easy manoeuvres. Signs could have to be installed in positions that facilitate reading and designed to facilitate the orientation and use of built spaces.

5.2 Teaching & learning spaces: classrooms and areas for self-study activities

The guidelines for teaching areas are based on criteria that, in addition to satisfying any changes in the number of students and the mix of disciplines taught, permit to respond to the most advanced teaching methodologies and future opportunities of use offered by information technology.

Flexibility must also be guaranteed in order to achieve high functional requirements even when the use of the classroom changes over time (within the day or semester) or when different activities are required in the same classroom (lecture, individual or group study). The aim is to facilitate student participation in the activities envisaged by the course of study, encourage collaboration among students and interaction between teacher and student, and at the same time offer adequate technology.

Each classroom must be equipped with cutting-edge video projection and sound systems and must guarantee the possibility of simultaneous use of video projections and blackboard, if the latter is not replaced by a visualizer and/or whiteboard.

For an important part of the small classrooms, but also for some of the larger classrooms, it is suggested to organize the spaces in such a way as to be able to accommodate equipment (mobile desks on wheels; mobile totems that allow to wire the individual variable workstations of the students; chair-queue that allows autonomous video/audio communications with

individual workstations) appropriate to innovative forms of teaching, for example based on forms of cooperative and collaborative learning.

In addition, some larger classrooms should be made up of two modules that can be used separately and, on occasion, can be unified through movable walls, on condition that functionality and soundproofing requirements are guaranteed.

Finally, regarding the spaces for the self-study activities (study rooms and learning spaces) should be highly versatile in order to host different configurations of use.

These spaces are aimed at enhancing social relations and the exchange of knowledge. This facilitates the creation of a continuous network of environments where different learning activities are carried out.

A versatile space such as the creation of "lounge" areas within a larger space can create the ideal conditions for creating small, informal study/work groups that enhance team building through group work.

It is also important to ensure that study spaces have a visible and recognizable identity to the public so that they can be located along the main circulation flows and, where possible, near refreshment areas. In the case of study rooms, the walls facing the corridor should be glazed for visibility and control of the users who attend them.

We would like to point out that the guidelines give peculiar information also in term of the minimum environmental requirements.

These requirements can be summarized as follows:

- natural light: such as to ensure as much time as possible for all spaces during their use;
- use of colour: using colour scales to create positive conditions for the mood and behaviour of users in the environment;
- use of texture and material: to control sound, light, and restore tactile sensations;
- furnishings and equipment that promote defined standards of behavior (e.g., soft furnishings, for relaxation areas, or equipped modules, for more formalized study areas);
- standardization: building according to the requirements for teaching and in response to the construction limit parameters, considering the results of space perception and the needs of internal mobility of the classroom, especially with regard to the use of technology.

5.3 Teaching & learning spaces: educational laboratories

Educational laboratories are areas used by large numbers of students, designed primarily for the courses of the first years of bachelor and, to a lesser extent, for master's degrees.

As for other learning spaces, it is important to pay particular attention to the study of "way-finding" using colours and graphics that connote the spaces.

According to the principle of "social building", in order to implement a sense of participation in the academic community (team building), solutions that make extensive use of transparent divisions will be preferred.

The intended model of laboratory educational space is characterized by:

- flexibility of lab configurations over the years;

- optimization of connective spaces pre- and post-practice for student-teacher interaction;
- spaces reserved for dedicated technical staff, functional for materials preparation;
- presence of service areas/ancillaries for storage of reagents, small instruments, waste, which can be easily transported in the laboratory.

To ensure full use of the laboratories and a higher flexibility over medium to long periods of time, it would seem appropriate to concentrate most of the teaching laboratories in a single "modular" structure that can easily adapt to changing needs, starting from the number of students to be housed in different turns of the laboratory.

5.4 Teaching & learning spaces: libraries

Libraries must be designed as innovative Learning Centre facilities, according to European and international standards. The library becomes the cultural and scientific heart of a university. The service should be strongly "user-oriented", with a view to total quality: the methods of delivery, the relationship with users, the opening hours, the collection development policy, the choice of technologies, the internal functional articulation and the mediation and communication techniques.

The functions and services provided by the library are geared towards:

- make its documentary heritage available on different media;
- make its paper volumes available for loan and satisfy any other information needs through interlibrary loan and the document delivery service;
- make available volumes of fiction and popular non-fiction, aimed at the target of university students, in order to promote recreational reading;
- provide high-level reference services (bibliographical information);
- support the development of information literacy;
- train users in the use of traditional and electronic bibliographic resources and in the use of library services;
- provide support services for teaching and training;
- promote and disseminate scientific, technical and cultural information;
- provide adequate and comfortable spaces for socializing, cultural exchange, and meetings;
- provide adequate and comfortable spaces for study and research, differentiated to accommodate different activities and different modes of study and work.

Libraries should be divided into 3 functional levels:

- 1) FORUM and Learning Commons area
- 2) Reference and Macro-thematic areas with open bookshelves
- 3) Storage, offices and service spaces for employees.

The three functional levels are arranged in an order of progressive detail, corresponding to different types of information needs, different forms of service delivery and different ways of ordering and displaying documents.

1) FORUM and Learning Commons area

This area should be designed to welcome the visitor and to connote the library in an innovative way. It must have characteristics of immediacy accessibility, recognisability, informality and centrality with respect to other functions.

This functional area includes:

- library entrance area, intended for reception and orientation functions;
- relaxation and socialization area, with an open bookshelf display of a selection of popular narrative volumes;
- Learning Commons, with informal and flexible spaces for study and education;
- back-office spaces;
- cafeteria (also facing the atrium of the building and opening independently from the library).

This is the part of the library with the strongest public impact, should be placed in absolute continuity with the Atrium of the building, which must be faced with large windows, to maximize visibility from inside to outside and vice versa.

The internal paths could be short, accessible to everyone in a simple and direct way, clearly identifiable from the entrance area, in order to allow an easy and immediate orientation.

Part of the FORUM Area are also the Learning Commons, flexible spaces for study, teaching and socialization, similar to those that may be provided in the teaching areas.

These are open, informal, flexible spaces, equipped for individual and group study, with furniture and movable partition walls; with spaces that can be subdivided into open or closed rooms of various sizes (also modular) for group study, presentations, frontal teaching activities, tutoring sessions, collaborative study activities, etc.

In the Learning Commons there may also be small seating tiers and there should be environments of various sizes, separated or acoustically separable with glazing and fixed and mobile soundproof partitions.

Some rooms and spaces need to be equipped with computer equipment, screens, videoconferencing equipment, etc.

2) Reference and open bookshelf subject areas, with study spaces.

The second level host the open-bookshelf area, the collections organized in thematic areas, with the various sections and subsections; the study spaces - distributed both in the open-bookshelf areas, and in other adjacent areas and in this case destined mainly for study with their own materials - differentiated by mode of study (individual and silent study; study and group work; etc.) and also, in small part, by target users (students; doctoral students; teachers and researchers).

The Unified Reference area precede the thematic areas. Here there also be the point of distribution of volumes from closed storage, and a section with that part of the documentary patrimony which is common to the different Macro-areas.

Each thematic area should be divided into an introductory area for general consultation and orientation.

The service should offer different study and consultation stations: individual consultation at the table, informal stations, individual boxes, consultation for small groups in acoustically protected rooms. There should be documents in all types of media and various ways of accessing documents should be possible:

- open bookshelf;
- by request for documents held in the floor storage rooms (direct access to the floor storage rooms should also be allowed);
- by request for documents located in the storage warehouse (closed storage).

3) Repositories and offices

The third level is accessed by users through librarians, requesting the retrieval of documents stored in the closed repository. The third level should also include offices, technical and administrative services, laboratories for the processing of materials, digitization, etc.

In the creation of these spaces as described for the classrooms, the materials used play an important role. Indeed, the furniture and materials of the interior strongly influence the quality and atmosphere of the library. The colour and textural characteristics of surfaces, whether rough or smooth, hard or soft, matte or glossy; the way they absorb or reflect light; the sensation of heat or cold to the touch; the odours they emanate or with which they are impregnated; the sound they reverberate or absorb or emit upon touch, impact, or walking; the way they age; their resistance to abrasion and use: these and other properties of materials form the basis of the perceptual experience of interior space and deeply engage the sensoriality of the people who stand there.

As far as floors are concerned, ceramic or stoneware tiles are to be avoided at all (except for bathrooms and storerooms), which are aesthetically unsuitable for a place like a library. Instead, smooth concrete, linoleum, PVC, industrial parquet, resin, stone, stoneware slabs with particular finishes or dimensions are to be preferred.

For the false ceiling, plasterboard false ceilings with removable squares and visible joints are to be avoided, as they inexorably give to the environment an "office" atmosphere. Instead, uniform plasterboard false ceilings are to be preferred, or characterized by an ad hoc design, perforated, with sound-absorbing mat, equipped with a sufficient number of hatches for access to the systems above.

The lighting design should aim to ensure not only the correct amount of light in terms of lux on the reading surface or lower bookshelves, but also to improve the interior atmosphere of the libraries by differentiating the lighting in the various areas.

Bookshelves could have their own lamps, while study tables should have both individual lamps for each study station and sockets located on the top for attaching laptops and computers.

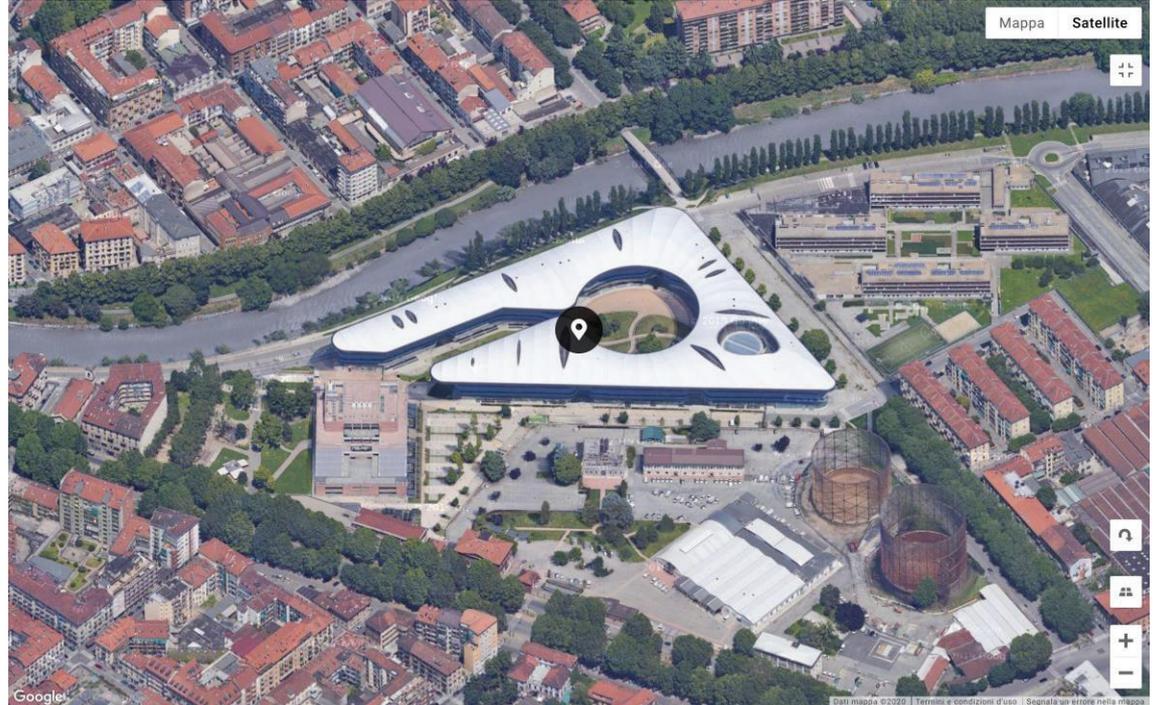
The use of natural light should obviously be favoured in the common areas that can be used during the day, places where people can meet, exchange and interact. Equally important should be the design of natural lighting in the reading and study rooms, and in open-shelf spaces, where light control will be of particular importance.

Although visibility of the interior of the building is to be encouraged, care should be taken to avoid direct sunlight.

Good practice example: Campus Luigi Einaudi, University of Turin

Scale	CAMPUS	
Example of excellence	Number	Identification (name)
	1	Campus Luigi Einaudi
Basic data	Name of the University	Location (city, country)
	University of Turin	Turin, Italy
Dimension analysis	<p>DIMENSION IN URBANISTIC-ARCHITECTURAL MATTER</p> <p>Uniting the faculties of Law and Political Science within a single, modern campus for 5,000 students, the project has created flexible new facilities for Turin University, as well as establishing new connections between the institution and wider community. The design links the former Italgas site on the southern bank of the River Dora with the neighbourhood of Borgo Rossini, regenerating a formerly industrial quarter close to the historic heart of the city, and turning the former source of Turin’s energy into an educational powerhouse to drive future prosperity.</p> <p>The design is a modern interpretation of the traditional cloistered quadrangle, formed of two linked buildings, unified by a single roof canopy and arranged around a central courtyard. A new four-storey library is located on the northern edge of the site, parallel to the River Dora, with the Law and Political Science faculties to the south – each faculty has its own entrance from the central courtyard. The ground floor accommodates lecture halls, circulation and social spaces, with teaching and faculty rooms in the quieter levels above. The first floor mezzanine is visible in the double-height atrium at the entrance to each faculty, animating the linear route that runs the entire length of the building. A roof garden provides a quiet space for study. Floor plates are flexible to support changes in teaching priorities, and an innovative design for the 500-seat auditorium allows it to be split in two, with 250 seats in each side.</p> <p>Sensitively combining existing and efficient new structures, some of the site’s historic buildings have been refurbished to house a café and student services – the former Piccolo Italgas building signals the main entrance to the campus, reached via the revitalised Via Vegezzi gardens. The masterplan creates a traffic-free oasis in the heart of a city plagued by congestion – vehicle access is from Corso Farini, where a covered gateway provides a sheltered, accessible route to the library and faculty buildings. The green setting includes a meandering ‘philosopher’s walk’, as well as new riverside paths and pedestrian routes that promote movement and life through the site and link with local rail and bus services. In addition, more than 7,200 square metres of photocatalytic paving tiles have been used in the hard landscaping to help neutralise the polluting effects of dust. The buildings incorporate a number of energy saving features, including passive strategies such as the overhanging roof, whose depth is determined by solar path analysis. The combination of natural and artificial lighting reduces energy use by almost 20 percent, intelligent building control systems ensure operational efficiency and a Tri-generation source provides heating and cooling, while</p>	

requiring 20 percent less energy than individual plant facilities



The numbers of the campus:

- 45,000 sqm of total land area
- 36,000 sqm of buildings
- 14,000 square metres of green space, including internal and external pedestrian paths
- over 700 study/consultation spaces located along the facades (for a total of about 1 km)
- a total of 900 parking spaces for students and staff (including underground and surface parking, with motorbike and bicycle parking spaces) - in full compliance with urban planning standards
- 280 rooms, over 40 mini-apartments for a total of 330 beds in Edisu accommodation
- 1.5 km of glass facades (very high acoustic and heat performance)
- diameter of the square about 80 m (like the nearby Piazza Montebello)
- building height at the highest point approx. 26m
- more than 270 tall trees and more than 5,000 shrubs and bushes

USERS

- 10,000 people, including students and staff, on the Campus
- 8,000 students in classrooms at the same time

SERVICES

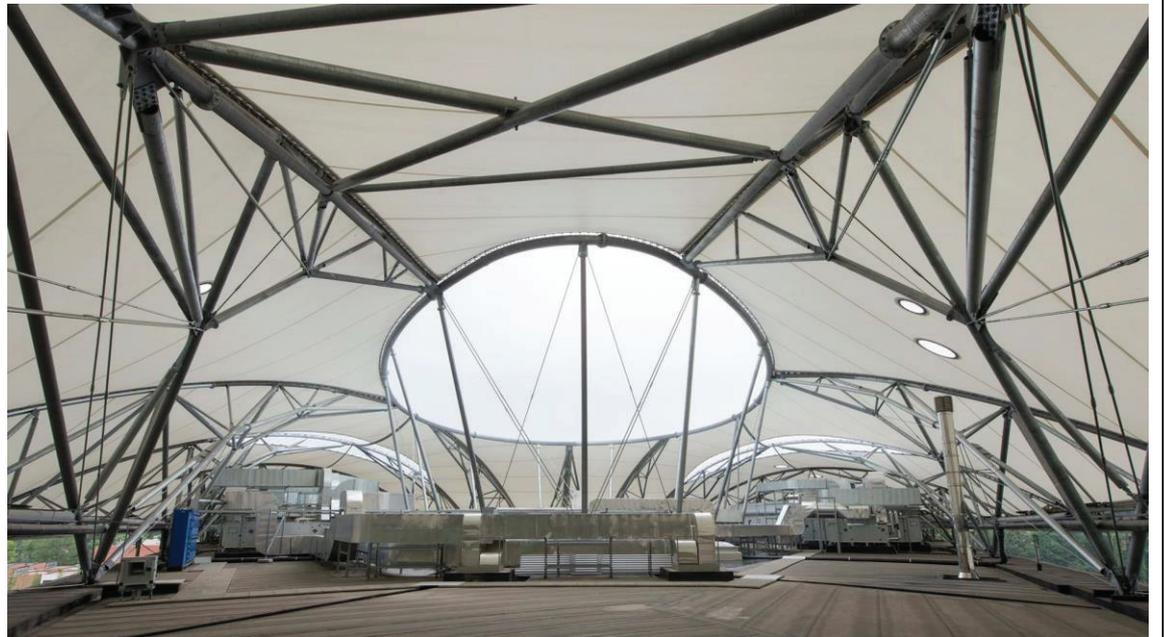
- 70 classrooms (in total, between the Palazzina Einaudi and the new buildings), including a 320-seat high-tech lecture theatre, which can be opened for external events

LIBRARY

- 10,000 square metres with 26 km of shelves - with a total of over 620,000 volumes, including 23,000 antique books and valuable collections.
- The library is also accessible from outside the city.
- language and computer laboratories

Images









Good practice example 2: requalification and technical modernisation of study and learning spaces, University of Milan

Scale	University	
Example of excellence	Number	Identification (name)
	1	
Basic data	Name of the University	Location (city, country)
	University of Milan	Milan, Italy
	<p>The University of Milan, in addition to the design and construction of new buildings such as the Veterinary Campus in Lodi, the Computer Science Department building in Città Studi and the design of the Campus for scientific faculties in the MIND area, has launched many projects for the requalification of historic buildings, in particular that of the Main Campus in Via Festa del Perdono.</p> <p>The design and fitting out of all the above interventions is based on close collaboration between the Building Direction and the Functional Centre for Innovative Didactics and Multimedia Technologies (CTU). The Building Direction, with the support of the CTU Staff and the ICT Direction, has drawn up a Guidelines Document that will be applied in the realisation of all the study spaces, both new buildings and refurbishments.</p>	

Functional upgrading of the Crociera area and adjacent libraries, via festa del Perdono 7

Numbers of the intervention

Area: sq.m.5979

Volumes: 756'921

Bookshelves: linear m 22'937

600 individual study places and 184 for group study

Project description

the Project envisages the functional requalification of the areas that currently house most of the Law and Humanities libraries in the areas surrounding Crociera. The project will unify the activities of reception, bibliographical information, advice to users on the use of resources, etc. in the new unified access area planned under the Portico in Largo Richini. From the new reception/access point it will be possible to reach the four library rooms (Crociera, Sotto Crociera, Common Law and the internal library of the Department of Italian and Supranational Public Law) which will be restructured and upgraded in order to offer adequate support to teaching and learning as well as to Research and Third Mission.

In the new functional organisation the libraries will guarantee suitable access to the collections, both traditional paper collections and electronic resources, and will offer training activities to users with suitable support for the development of the so-called information skills of the four libraries.

The Project also significantly redefines some essential aspects of the Library housed in the Crociera area, pursuing the objective of freeing up the north-south arm of the same, which connects the Cortile d'Onore of the Ca' Granda to the Portico di San Nazaro, restoring the original artistic and monumental value of this large nave by rethinking the flexible and multifunctional space, furnished to be used in a flexible and informal manner, for group study, reading and socialising.

By inserting a mobile portal at the beginning of the wing towards San Nazaro, it will be possible, if necessary, to isolate this aisle from the rest of the Cruise, making it autonomous for short periods of time, independent and usable for events, exhibitions, conferences, etc..

In order to unify access to the four libraries, it is planned to create a single entrance from the Portico in front of Largo Richini.

The project foresees the realisation of a double staircase, one serving the neighbouring departmental areas and connecting the seminar/conference room located on the mezzanine floor of the Crociera wing, the other as a "dedicated" vertical connection to the library spaces. It is also planned an autonomous vertical connection, with a helicoidal staircase and a glass lift, at the end of the arm towards Via Francesco Sforza, to allow direct and autonomous access, and guarantee accessibility for the disabled, to the seminar/conference room located on the mezzanine at the end of the arm towards Via Francesco Sforza.

Images



6. Conclusions and recommendations

The analyses that we conducted clearly showed the lack of legislative and regulatory frameworks for defining the space dedicated to L&T, not only for higher education, but in general for the entire Italian education system.

From the examination of the documentation we found that, at the regulatory level, the spaces dedicated to education follow the same rules established for the public buildings without considering the importance they have in creating an adequate environment for the needs of new educational and pedagogical processes.

In the Italian higher education system, the difficulty of drawing up common strategies related to the definition of spaces dedicated to L&T also lies in the complexity and heterogeneity of the university system. Italy boasts an almost millenary university history which has been increasingly integrated into the urban context over the centuries. Such contamination, while on one hand allowed promiscuity with the social tissue, on the other hand led, in the expansion phases of the universities, to the re-adaptation to classrooms of structures dedicated to housing and/or offices. This type of interventions, together with a lack of awareness of the importance of space in L&T - it is well known that until a few years ago only the centrality of the teacher and not also the context was thought of -, have generated a strong heterogeneity among the various universities. This situation is also amplified by the large number of Italian universities and their geographical distribution over the country.

For the last few years, the central authority responsible for the legislative control of the university system, currently the Ministry for University and Research, has been paying most attention to the quality of university teaching, partly in response to important requests from the European Parliament. In particular, supervisory committees have been set up with the task of monitoring the quality of the teaching provided at each individual university and taking corrective action where this is not adequate. However, little attention is still paid to L&T spaces, the adequacy of which plays a marginal role in the processes of evaluating the quality of teaching and in the accreditation of new universities. The lack of legislation has prompted universities to organise themselves regarding the definition and design of L&T spaces.

In recent years, university governance has shown itself to be increasingly sensitive to this issue because it experiences how the lack of a regulatory system of good practice is reflected in a reduction in the quality of training and qualification of students. In particular, the structural and technological inadequacy of most Italian universities became evident during the current pandemic where, in addition to the suspension of teaching, the digitalisation of classrooms had to be remedied quickly and not always effectively in order to guarantee all enrolled students to follow the courses. The pandemic event has further underlined the problem existing in most Italian universities concerning T&L spaces, as in most cases the adaptation is stationary at the end of the 1980s and the interventions were only limited to the remodelling in terms of the elimination of architectural barriers.

It is therefore a common thought that the issue of L&T spaces can no longer be neglected and has become such a priority that it has been addressed by the most virtuous universities in the

strategy document. Several universities have decided to invest resources to address the problem of L&T spaces by setting up commissions and/or divisions (building division) which, with the help of external consultants, have the task of better defining existing and future L&T spaces.

On the basis of these considerations, it is clear that it is a priority to define ministerial guidelines to standardise the university training process throughout the country, which cannot ignore the correct design and definition of the spaces to be dedicated to L&T.

Approaches to L&T in higher education are constantly evolving due to the emphasis on the search for an increasingly inclusive way of education. Therefore, we believe that there is a concrete need for a national coordination centre that will provide the theoretical part of L&T with suitable spaces. The key is to project dynamic spaces to be adapted to the new L&T requirements with a small effort. Another fundamental part is to consider the L&T aspects of each discipline and create the specific environmental conditions: for instance the different infrastructural and technological requirements needed for a classic classroom or for language laboratory or a scientific teaching laboratory.

In conclusion, in a wider scenario than the national one, it is our opinion that only through the establishment of a permanent commission of T&L experts and technicians capable of responding to the needs with specific architectural and technological solutions can establish effective and dynamic guidelines that can standardise the educational offer in higher education.

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