



e-Campus Case Study Report

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FORWARD

The present report is part of IO1 of the ECOLHE PROJECT - *E-learning in the European Higher Education Area*, an Erasmus+ KA2 - Strategic Partnerships in the field of Education (2020-1-IT02-KA203-079176).

IO1 focuses on national case studies which explore how universities have transposed into organizational practices the provisions found in European documents, with a particular focus on the issues of exploitation of ICT for LLL, quality standards and teachers' professional development. It has been carried out on the basis of IO1 prepared by Rome Tre University in the first phase, describing the entire research design ([IO1.A1 *Digital Technologies in HE: from the European vision to the university governance. Theoretical framework, European framework, Template and tools for national Case Studies*](#)), in relation to: theoretical framework, methodology, instruments and outputs.

The main objectives of the multiple case studies (Yin, 2003) are to illustrate:

- needs and prospect of improvement in the use of digital technologies in HE;
- emerging teaching and staff skills in the digital era;
- the most important problems detected and possible solutions.

National reports aim to guide the next research process in the ECOLHE Project, providing important information about the national implementation process regarding the enhancement of digital technologies in HE.

For this reason, Italian national reports focus on national Higher Education starting from the Bologna Process (1999) which represents the start-up stage in the construction of the European Higher Education Area (EHEA), where digital resources have always been considered as strategic to guarantee inclusion, transparency, integration, sharing and mobility.

Following methodological and operation instructions of IO1.A1, Italian national reports explore:

- the national framework through the national legislative evolution;
- the professional development;
- the national system of Assessment and Quality Assurance in HE and the national financing programs;
- two case studies: the first one from e-Campus which is one of the 11 accredited Italian online universities, and the second one from Roma Tre University, which is a public and conventional university.

The second part of this paper is focused on e-Campus University case study.

INTRODUCTION

The ECOLHE project was born in 2017 and since then it has been revised and improved. The project was born before the Covid-19 pandemic, because there was already the clear awareness that the university system had to start dealing with a more intensive use of ICT in the teaching and learning processes. After the pandemic crisis, the objectives of ECOLHE have become more pertinent than ever. ECOLHE intends to experience a **new online training model** to respond to the **new demands for knowledge and skills**, in a context of a **universal entitlement to lifelong learning, inclusion and quality of education**, as set out in the ILO report *The Future of Work* (International Labour Organisation, 2019).

ECOLHE will examine national public policies for e-learning in HE related to case studies to study the transformation of key concepts from the supranational to the national level (i.e.: dominant rhetoric, orientations, legacies, obligations, risks and opportunities, expectations, educational paradigm and so on), during the implementation of inclusive and LLL processes based on digital technologies.

The aim of the project is to examine in HE the way in which each university (units of analysis) involved develops its strategic approaches to digitisation. Specifically, we will examine the respective micro-policies of each unit of analysis and how they have "translated" the digital challenge into practice, following a national framework.

To achieve this objective, **each case study report presents the following structure:**

- a reconstruction of the national political framework related to the digital innovation in HE;
- a focus on universities' micro-policies by documentary analysis;
- a qualitative analysis of the focus group and interviews;
- quantitative data from the students' experiences related to the HE digital changes collected through an online survey.

The analysis will focus on three areas - organisational, teaching-learning (educational) and cultural area - that consider the following seven sub-dimensions of analysis, based on the proposal of a Digital Maturity Framework for Higher Education Institution¹ which synthesises the main existent frameworks/models related to the integration of digital technologies in HE (Đurek, Begičević Ređep, Kadoić, 2019):

1. Leadership, planning and management;
2. Quality assurance;
3. Scientific-research work;
4. Technology transfer and service to society;
5. Learning and teaching;

¹ Area/Dimension of analysis from the digital maturity framework: 1. Leadership, planning and management; 2. Quality assurance; 3. Scientific-research work; 4. Technology transfer and service to society; 5. Learning and teaching; 6. ICT culture; 7. ICT resources and infrastructure http://archive.ceciis.foi.hr/app/public/conferences/2017/02/CECIIS-2017_paper_58_final.pdf (See Annexes 1, in IO1.A1, *Digital Technologies in HE: from the European vision to the university governance. Theoretical framework, European framework, Template and tools for national Case Studies*).

6. ICT culture;
7. ICT resources and infrastructure.

The exploration of these seven areas will allow us to identify for each case study the main interesting experiences in the field of:

1. Enhancing digital technologies in Higher Education institutions;
2. Academics professional development paths with a focus on digital innovation;
3. Quality assurance in Higher Education with particular attention to digital innovation quality standards in teaching-learning processes;
4. Recognition and validation of teaching competencies with particular attention to digital skills in Higher Education.

Based on these assumptions, the report is structured into three main sections:

- a. I part: the Italian national framework. This first section is divided into two main chapters. The first one presents the reconstruction of the national regulatory framework, while the second one offers a summary of the interviews with privileged witnesses identified among some decision-makers who contribute to animating the national meso-implementation space;
 - b. II part: the results of the field research. The second section illustrates the case study carried out at e-Campus University and consists of four chapters. The first one illustrates the case study through the documentary analysis carried out on official sources; the second one summarises the analysis of the interviews with the academic bodies; the third one presents the results of the focus groups carried out with teachers, tutors and technical-administrative staff; the last chapter offers a descriptive analysis of frequencies and bivariate analysis for understanding the sample and the most significant trends.
- III. Results / Conclusions. The last section summarises the most relevant results of the research through a SWOT Analysis that helps define strengths, weaknesses, risks, threats and opportunities.

I PART. Literature analysis: description of the national framework

1. INTRODUCTION

In this paragraph we will select and present the main legislative decision concerning the Digital Technologies in HE after the Bologna Process to understand resources and constraints in building an E-learning European HE Area, founded on teachers' professional development and European quality assurance standards.

2. THE NATIONAL LEGISLATIVE FRAMEWORK

1. 2003 Moratti-Stanca reform regulates open universities and establishes the certification standards

The 2003 Moratti-Stanca reform was a set of regulatory acts concerning both schools and universities. It started with the Moratti law of 28th March, 2003, n. 53, "Delegation to the Government of the educational general rules definition and essential levels of performance in the field of education and professional training". It was followed by subsequent decrees establishing the requirements for online training courses and the procedures for the approval of public and private Italian universities. The intention was to promote lifelong learning and make university education more accessible and cheaper. Open universities should allow teaching to be extended to the entire life span, reaching also segments of the population who, for several reasons, may be unable to access university training such as workers, elderly, sick, weak, or marginalized people, and those who live in outlying areas.

The reform intended to enhance the Italian culture and its specificities, strengthening the links between universities and the world of work and encouraging the participation of private individuals through the use of the experiences of business management schools in order to retrain workers with the use of new training tools. E-learning is not only one of the five fundamental areas that the European Union has set for the development of the Information Society but it would drastically lower the costs necessary for obtaining the degree, thus making university education truly accessible to many people. In addition, the State intended to use e-learning for its staff training. Specifically, the reform provides for:

- The release of academic qualifications. The online courses were "established and activated by private and public universities and use ICT in accordance with the [indicated] technical requirements". It was also envisaged that academic degrees could "be delivered by public and private universities and recognized according to the established criteria and procedures".
- The definition of characteristics of online courses which were delivered through the use of the network connection for the use of teaching materials and the development of training activities based on interactivity with the teacher-tutors and with the other students of the personal computer, continuous monitoring of the level of learning. In this sense, selective criteria have been identified to ensure the quality of the courses and the seriousness of the didactic offer.

- The planning of multimedia and interactive online learning to maximize the potential of ICT and encourage the planning of personalized study paths, thus optimizing learning.
- The definition of the accreditation procedure for online courses and the drafting of a Service Charter which provides for the teaching methodology and the stipulation of a specific contract with the student.
- The evaluation of the students through the assessment of the results and the recruitment of the teaching staff according to the procedures established by law. However, universities can stipulate specific private law contracts with personnel if they possess adequate technical-professional requirements.

2. The Digital Manager (RTD)

After two years, the decree-law of 7th March 2005, n. 82, "Code of digital administration", establishes the position of digital manager which is required to grant the digital transformation of Public Administration. The Digital Manager (RTD) is also responsible for the digital transformation. The RTD has among the main functions that of operationally guaranteeing the digital transformation of the Public Administration, coordinating it in the development of digital public services and in the adoption of transparent and open relationship models with citizens.

Article no. 17 of the Digital Administration Code obliges all administrations to identify an office for the transition to digital mode - whose manager is the RTD - which is responsible for the activities and organisational processes connected to it and necessary for the implementation of a digital administration and the provision of usable, useful and quality services. With Circular no. 3 of 1st October 2018², adopted by the Minister for Public Administration, all public administrations are urged to identify an RTD.

3. Gelmini Law 240/2010 -> National systems of assessment and Quality Assurance in HE institution

In 2010, the Gelmini law (law 240/2010) "Rules on the organisation of universities, academic staff and recruitment, as well as delegation to the government to encourage the quality and efficiency of the university system", changed what was established by the Moratti law regarding the recruitment of university personnel (title III) and the rules on the quality and efficiency of the university system (title II). It established the National systems of assessment and Quality Assurance in HE (ANVUR) that regulates universities' organisation, academic staff roles, and recruitment procedures.

The law defines the tasks and functions of ANVUR and, in particular:

- the external evaluation of the quality of the activities of universities and public and private research bodies receiving public funding;
- the direction of the evaluation activities delegated to the internal evaluation units of the universities and research bodies;
- the evaluation of the efficiency and effectiveness of public funding and incentive programs for research and innovation activities.

It is therefore up to ANVUR to propose methods of accreditation of the research doctorate offices and courses and to express an opinion, in fact binding, on the granting or not of the same to individual courses and centres

² <https://www.agid.gov.it/agenzia/responsabile-transizione-digitale/circolare>

and to develop mechanisms for evaluating recruitment policies of universities based on the scientific production by professors and researchers.

Until 2020, the current legislation on universities has remained the same, while a process of regulatory development has been opened, affecting schools of all levels with law 107/2015 on the Good School and the National Digital School plan, planning for the implementation of an innovation strategy for the new positioning of the education system in the digital era. Then, until 2020 the legislation in effect for universities has essentially remained unchanged while the legislation for the school digitalisation has developed. The difference between school and higher education was confirmed in 2020 leading to the establishment of two distinct ministries for school and university still in place.

4. Law for the establishment of two distinct ministries for school and university

The decree-law of 2020, no. 1 "Urgent provisions for the establishment of the Ministry of Education and the Ministry of University and Research", and its subsequent conversion into law two months later, suppresses the Ministry of Education, University and Research (MIUR) and establishes two distinct ministries: the Ministry of Education (MT) and the Ministry of University and Research (MUR), increasing the number of ministries to 14.

For the establishment of MUR, the expenditure of 4.5 million Euro was authorized for the years 2020 and 2021 per year starting from 2021, of which 327,500 Euro for 2020 and 393,000 Euro per year starting from 2021. An additional expense of 132,000 Euro for 2020 and 80,000 Euro per year starting from 2021 was authorized for the costs relating to IT equipment, furnishings, and missions (Article 1).

With the separation of the two ministries, the tasks of MUR were modified both as regards research and artistic institutions. In fact, MUR currently has tasks of coordination and supervision of non-instrumental research institutions and bodies, while previously only the task of "monitoring" was envisaged, and the skills in the sector of higher artistic and musical education change, carrying out functions of research and completion of the autonomy of higher artistic, musical and dance training.

Among the missions and functions of MUR, the "implementation of EU and international rules on university education and higher artistic musical and dance training, European harmonization and international integration of the university system and higher artistic musical and dance training also in implementation of cultural agreements signed by the Ministry of Foreign Affairs and International Cooperation".

5. Decree-law of 23rd February 2020 "Urgent measures in the field of containment and management of the epidemiological emergency from COVID-19"

In the same period in Italy, the spread of the pandemic led the government to legislate in order to manage the health emergency. The decree-law of 23rd February 2020 defines the "Urgent measures in the field of containment and management of the epidemiological emergency from COVID-19". In Article 1 "Urgent measures to avoid the spread of COVID-19" it is stated that:

"1. In order to avoid the spread of COVID-19, in municipalities or areas where at least one person is positive for whom the source of transmission is not known or in any case in which there is a case not attributable to a person coming from an area already affected by the infection of the aforementioned virus, the competent authorities are required to adopt all containment and management measures that are adequate and proportionate to the evolution of the epidemiological situation.

2. Among the measures referred to in paragraph 1, the following may also be adopted: [...]

d) suspension of educational services for children and schools of all levels, as well as the attendance of school and higher education activities, including university, except for online learning activities".

However, in Article 3 it is stated that: "The measures referred to in Articles 1 and 2 are adopted, without new or greater burdens for public finance, ministers, on the proposal of the Minister of Health, having heard the Minister of the Interior, the Minister of Defence, the Minister of Economy and Finance and the other ministers competent for the matter".

The decree-law was followed by the decrees of the President of the Council of Ministers (DPCM) which in relation to the spread of the infection regulated the methods of access to university education and which was received and implemented by the universities. The first among them is the DPCM of 4th March 2020 containing "Further implementing provisions of the decree-law of 23rd February 2020, no. 6, containing urgent measures regarding the containment and management of the epidemiological emergency from COVID-19, applicable throughout the national territory". In Article 1 of the DPCM the measures to contrast and contain the spread of the COVID-19 virus throughout the country are outlined:

"In order to contrast and contain the spread of the COVID-19 virus, the following measures are applied throughout the national territory: [...]

h) in Universities and Institutions of high artistic musical and dance training, for the entire duration of the suspension, didactic or curricular activities can be carried out, where possible, with online modalities, identified by the same Universities and Institutions, having particular regard to the specific needs of students with disabilities; the Universities and Institutions, after the restoration of ordinary functionality, ensure, where deemed necessary and in any case identifying the relative modalities, the recovery of the training activities as well as the curricular ones or any other test or verification, also intermediate, which are functional to the completion of the educational path;

i) for the benefit of students who are not allowed, for the needs related to the health emergency referred to in this decree, to participate in the educational or curricular activities of the Universities and Institutions of high artistic, musical and dance training, such activities can be carried out, where possible, with online modalities, identified by the same Universities and Institutions, also having regard to the specific needs of students with disabilities; Universities and Institutions ensure, where deemed necessary and in any case identifying the relative modalities, the recovery of the educational activities, as well as of the curricular ones, or of any other test or verification, even intermediate, that are functional to the completion of the didactic path; the absences accrued by the students referred to in this letter are not counted for the purposes of any admission to final exams as well as for the purposes of the relative assessments".

6. Budget law 2020:

In December 2020, the Budget Law envisages new funds for schools (distance learning and tools for students) but not for universities. In this case, under the heading "digitalisation", the text provides 40 million Euro for digitalisation, together with additional resources to enhance the administrative and educational action in schools, also with the use of digital animators and new technologies. The territorial training teams of teachers, who deal with the implementation of the National Digital School Plan, are confirmed and strengthened, to accelerate innovation processes in schools, promote staff training and enhance the skills of students on

innovative teaching methodologies and on integrated digital teaching. 20 million Euro were then allocated to grant less well-off students a mobile device with connectivity or a bonus of the same value on loan for free use".

2.1 Professional development

1. INDIRE (National Institute for Documentation, Innovation and Educational Research)³

INDIRE (National Institute for Documentation, Innovation and Educational Research) is the Italian Ministry of Education's oldest research organisation. It is a public body, scientifically independent, and enjoys statutory, organizational, regulatory, administrative, financial, accounting, and patrimonial autonomy. INDIRE is the benchmark for educational research in Italy. It develops new teaching models, tries out new technology for training courses, and fosters innovation redefining the relationship between space and time of learning and teaching. The Institute boasts consolidated experience in the in-service training of teachers, administrative, technical, and auxiliary staff as well as headmasters, and has been a leading player in some of the most important e-learning experiences in Europe. It also develops actions to support educational improvement processes to raise teaching quality and pupils' achievements.

INDIRE is also the Italian National Agency for Erasmus +, the European Program for Education, Training, Youth and Sport 2014-2020. Additionally, it is the National Support Service for eTwinning - the community for teachers to connect, collaborate and share ideas in Europe - as well as for Epale - the Electronic Platform for Adult Learning in Europe - and for Eurydice, the network providing information on education systems and policies in 37 countries.

At an international level, INDIRE is part of the EUN Consortium European Schoolnet, consisting of 31 European Ministries of Education, promoting innovation in teaching, and learning in an international dimension. The Institute looks towards Europe also through its many collaborations which allow the creation of a network for cooperation, contacts, information flows and experience exchanges involving pupils, schools, enterprises, and institutions in all European countries.

2. 2012 e-Gov Plan defines the Guidelines for the Digital University

The 2012 e-Gov Plan developed guidelines to encourage universities in the adoption of procedures to facilitate the dissemination and accelerate the process of digitalization and administrative simplification of universities with the introduction, strengthening and standardization of different services:

- implementation of the digital recording process of the exams;
- students' records;
- implementation of cooperation;
- adoption of VoIP (voice over IP) systems;
- federated authentication for internet access and network resources;
- digitalization of degree and theses;
- online payments;

³ This section cites the INDIRE presentation of its role and functions

- moreover, the National Plan for public administration IT (three-year plan) aims to support the digital transformation of the country, with particular attention to the public administration.

In the implementation of the innovation programme for universities, defined by the 2012 e-Gov plan, various initiatives have been launched, aimed at encouraging universities in the adoption of procedures related to the administrative digitalisation of universities.

The 2012 e-Gov Plan defined a set of digital innovation projects with the aim of modernising and making the public administration more efficient and transparent, improving the quality and efficiency of services provided to citizens and businesses. The implementation of advanced services for students, teachers, and administrative staff, as well as digital infrastructures, offered by all Italian universities was a priority objective.

The "Digital University" project was jointly carried out by the Ministry of Education, University and Research and the Department for the digitalisation of public administration and technological innovation of the Presidency of the Council of Ministers in collaboration with twenty-seven Italian universities. They took care of the "Digital University" project at the end of which guidelines have been drawn up to facilitate the dissemination and accelerate the process of digitalisation and administrative simplification of universities with the introduction, enhancement, and standardization of various services:

- implementation of the digital recording process of the exams;
- student file;
- applicative cooperation;
- adoption of VoIP (voice over IP) systems;
- federated authentication for internet access and network resources;
- digitalisation of degree theses;
- online payments;
- guidelines for online registration.

3. CRUI (Italian Universities Council of Rectors)

CRUI (Conference of Rectors of Italian Universities) is the association of public and private Italian universities. Founded in 1963 as a private association of Rectors, it has acquired over time a recognised institutional and representative role and a concrete ability to influence the development of the university system through intense study and experimentation. Since 2007, CRUI has become the association of recognised public and private universities.

CRUI is defined as:

- a tool for directing and coordinating university autonomy;
- the privileged place for experimenting models and methods to be transferred to the university system;
- the laboratory for sharing and disseminating best practices;
- the modern service centre available to universities.

Since 2001, the Rectors' Conference has been supported by CRUI Foundation, which has the task of developing interface actions between the university system and the society, with a view to the cultural and economic development of the country.

In particular, CRUI has established a specific Working Group for ICT, which paid particular attention to the central role of ICT technologies in ensuring the functioning of the national university and research system. The COVID-19 pandemic has made these tools essential for carrying out teaching and research activities even at a distance. For over ten years, a centralised negotiation activity to simplify the procurement methods of IT services has been supported. The constitution of the ICT working group in 2017 has expanded the range of initiatives that CRUI carries out in this area, strengthening the negotiation activity to meet the requests coming from the System and starting institutional collaborations, through protocols of understanding, with government agencies and the main operators in the ICT market, such as the Ministry of Education, University and Research, the Minister for technological innovation and digital transformation, AgId⁴, Consortium GARR⁵, and ConSIP⁶. These collaborations intend to structure in a coordinated way a constructive dialogue with the competent institutions also for the shared definition of a Strategic Plan for the “digital transformation” of universities.

CRUI also plays a role of contractor for the acquisition of IT resources for the benefit of the entire national university system, research institutions and integrated hospitals. This offers the advantage of accessing an economy of scale and of providing negotiation expertise in this sector at a national level.

Thanks to the memoranda of understanding signed over the years with some of the main players in the ICT market, it has been possible to identify support actions and initiatives for the entire System, in the context of research, technological development, digital transformation and innovation, educational activities and training. Currently, these collaboration agreements are in place with Microsoft, VMWare, Oracle, IBM and Sonicwall.

The training of digital skills undertaken by CRUI followed several guidelines:

- seminars, webinars, and initiatives dedicated to the national university system, research institutions and integrated hospitals;
- technical courses for university staff also with certification courses, even free of charge, in collaboration with the major players in the market with which agreements or framework contracts are in place;
- training activities for Public Administrations carried out in collaboration with other Institutions, such as the one with AgId started in 2020: "First cycle of CRUI-AGID training for central and local PPAA digital transition managers and for managers and employees involved in innovation and digitalisation processes within the PA".

Other educational paths have already been designed (for example on project management, digital skills, accessibility and usability of websites, e-procurement).

⁴ AgID: The Agency for Digital Italy is the technical agency of the Italian Council Presidency which has the task of guaranteeing the achievement of the Italian Digital Agenda's goals contributing to the dissemination of the use of information and communication technologies, and favouring innovation and economic growth.

⁵ The GARR Consortium manages a network that interconnects effectively universities, research centres, libraries, museums, schools, and other places where education, science, culture, and innovation are carried out all over the country.

⁶ CONSIP: A Ministry of Economy and Finance joint stock company aiming to make the use of public resources more efficient and transparent, and providing the Administrations with tools and skills to manage their purchases of goods and services, stimulating companies to compete with the public system.

It is interesting to underline how, during the pandemic, the system that manages universities and research has withstood the emergency thanks to the capillarity of infrastructures and the use of the cloud, thus avoiding the feared blockade at the beginning of the health alarm.

CRUI notes how the COVID-19 emergency has helped to redefine people's behaviour and has given a boost to a mass digital transformation in a way that no regulatory tool has been able to do. If the use of digital technologies has made its way into personal devices in the workplace, their use still struggles to fully enter the processes, especially with regard to public administration, despite the numerous government measures aimed at developing a digital culture capable of simplifying services for citizens and businesses.

The country's lockdown has led to social distancing and developed remote working, enabling as many people as possible to work from home with their personal devices. CRUI notes how the national university system has "reacted in a surprising way to this transition by moving its activities to distance in just over two weeks, in particular the lessons that involve more than one and a half million students. More than 90% of the more than 76,000 courses scheduled in the second semester are delivered online in synchronous mode, that is, through videoconferencing systems, students have had access to lectures held by teachers, having the opportunity to interact to ask questions and insights. "

The emergency situation has therefore highlighted the importance of infrastructures without which the resumption of remote activities would not have been possible.

"Nearly two million people have gone from a face-to-face activity to a remote one, and this was possible thanks to the use of cloud systems capable of absorbing millions of audio video streams, having computing power otherwise lacking in the various organizations, and making the structuring of its services in a hybrid cloud model in which the data resides partly in public clouds, and partly within the more traditional perimeter of one's organization".

The university system, together with the main Italian research institutions, has developed and maintained its own national network, which is managed by the GARR Consortium, allowing adequate data transfer capacity that is necessary to support national research activities.

4. Three-year plan for public administration information technology: digitalisation of the PA

The three-year plan for Public Administration IT is aimed at promoting the digital transformation of the country and, in particular, that of the Italian Public Administration. This transformation must take place in the context of the single European market for digital goods and services, according to an EU strategy for improving online access to goods and services. This will enable the creation of favourable conditions to maximize the potential growth of the European digital economy. Public universities are involved in this process even if they are not directly mentioned since the administrative and teaching staffs are public employees.

The objectives of the three-year plan are based on the indications emerging from the new European programming 2021-2027, on the principles of the 2016-2020 government Action Plan and on the actions envisaged by the Tallinn government Declaration (2017-2021), whose indicators measure the level of digitalization across the EU and note the actual presence and use of digital services by citizens and businesses.

The 2020-2022 three-year Plan represents the natural evolution of the two previous plans: where the first edition emphasized the introduction of the IT strategic model in the PA and the second edition aimed to detail

the implementation of the model, this edition focuses on the implementation of the planned actions, having - in the last three years - shared with the administrations the same language, the same aims and the same project references.

In this perspective, the 2020-2022 plan introduces an important innovation with reference to the recipients of the objectives identified for each of the issues addressed. In fact, the individual administrations will have to achieve the objectives listed, often "ambitious" but sustainable objectives as they are built on experience, comparison, and the needs of the recipient administrations. These are wide-ranging objectives, however, expressed in very concrete results. The innovative element of this plan lies precisely in the strong emphasis placed on measuring these results, thus introducing food for thought and an operational guide for all administrations: the culture of measurement and consequently of data quality becomes one of the main reasons for this approach.

The main objective of the plan is to foster the development of a digital society, where services put citizens and businesses at the centre, through the digitalization of the public administration which is the engine of development for the whole country.

- Promoting sustainable, ethical, and inclusive development, through innovation and digitalization at the service of people, communities, and territories, while respecting environmental sustainability.
- Contributing to the spread of new digital technologies in the Italian productive fabric, encouraging standardization, innovation, and experimentation in the field of public services.

In particular, the following principles have been identified to guide the transformation of the Public Administration:

- **digital & mobile first (digital and mobile as the first option):** public administrations must create primarily digital services;
- **digital identity only (exclusive access through digital identity):** PAs must exclusively adopt digital identity systems defined by the legislation ensuring at least access via SPID;
- **cloud first (cloud as the first option):** when defining a new project and developing new services, public administrations primarily adopt the cloud paradigm, considering the need to prevent the risk of lock-in;
- **inclusive and accessible services:** public administrations must design digital public services that are inclusive and that meet the different needs of people and individual territories;
- **public data a common good:** the information assets of the public administration are a fundamental asset for the development of the country and must be valued and made available to citizens and businesses, in an open and interoperable form;
- **interoperable by design:** public services must be designed to operate in an integrated and seamless way throughout the single market by exposing the appropriate APIs;
- **security and privacy by design:** digital services must be designed and delivered securely and guarantee the protection of personal data;
- **user-centric, data driven and agile:** administrations develop digital services, providing agile methods of continuous improvement, starting from the user experience, and based on the continuous measurement of performance and use;

- **once only**: public administrations must avoid asking citizens and businesses for information already provided;
- **cross-border by design** (conceived as cross-border): public administrations must make relevant digital public services available cross-border;
- **open code**: public administrations must prefer the use of software with open code and, in the case of software developed on their behalf, the source code must be made available.

Finally, in the three-year plan, the COVID 19 emergency has required PAs to proceed quickly with the activation of procedures for widespread remote working, which involved over 75% of employees; the lockdown resulted in a new and sudden working condition for the employees, which brought out some critical issues in the use of technological tools (previously not detectable given the possibility of obtaining immediate support in the office); and, in many areas, it highlighted the need to thoroughly review the organization of processes, favouring the sharing of documents and work materials on the network.

Likewise, this method has favoured in employees the emergence of a cultural sensitivity towards new paradigms of "productivity" compared to the canonical concept of "attestation of presence" of the public administration. In this sense, it represents a significant potential cultural change in the company-employee relations.

Remote working, if considered as a fully operational mode of working even in the post-emergency phase, could constitute a profound element of innovation for the Administration, as long as it is supported by a systemic organizational change and the technological evolution of public sector information systems. As a result, it is necessary to take the opportunity of the three-year plan to start a new phase - mediated and facilitated by the figures of the Managers of the Digital Transition - in which the working paradigm in the PA can be reversed so as to apply the digitalization process to a context of organisational change, obtaining on the one hand real advantage and, on the other hand, generating trust in information systems and technology.

2.2 National systems of assessment and Quality Assurance in HE

1. ANVUR

ANVUR is an independent agency supervised by MIUR which aims to evaluate universities' and research bodies' quality of processes, results and products of management, training and research activities, and technology transfer. In particular, it evaluates:

- the efficiency and effectiveness of teaching resulting in students' learning outcomes and work placement;
- the quality of research products, mainly assessed through peer-to-peer procedures (peer review);
- the ability to attract external funding and to activate researchers' collaborations and exchange;
- the adequacy of public communication of the educational offer, student services and evaluation results.

ANVUR oversees the national public quality assessment system of universities and research bodies, a role played by CNVSU and CIVR until the establishment of the Agency.

The Agency also carries out functions of guiding CONVUI activities, with the exception of those entrusted by the institutions to which it belongs, and prepares uniform procedures for the survey of the assessment of structures and study courses for the purposes of their periodic accreditation, requirements for the institution of new universities or new offices and for the activation of study courses.

Under Law 240/2010, the tasks and functions of the Agency have been further specified in the sense that it is responsible for:

- the external evaluation of the quality of the activities of universities and public and private research bodies receiving public funding;
- the direction of the evaluation activities delegated to the internal evaluation units of the universities and research bodies;
- the evaluation of the efficiency and effectiveness of public funding and incentive programs for research and innovation activities.

It is also up to ANVUR to propose methods of accreditation of the research doctorate offices and courses and to express an opinion, in fact binding, on granting or not the same to individual courses and centres and to develop mechanisms for evaluating the recruitment policies of the founded universities and the scientific production by professors and researchers.

The Agency for the Evaluation of the University and Research System (ANVUR) oversees the national public system for assessing the quality of universities and research bodies. It takes care of the external evaluation of the quality of the activities of the Universities and Research Bodies receiving public funding and directs the activities of the Evaluation Units. Finally, it evaluates the effectiveness and efficiency of public funding and incentive programs for research and innovation activities.

In particular, ANVUR carries out the following activities:

- evaluates the quality of the processes, results and products of management, training, research, technology transfer activities of Universities and Research Bodies;
- defines the criteria and methodologies for the evaluation of locations and study courses, including doctorates and specialisation courses.

ANVUR has built a working team aiming to survey the university's teaching experiences during Covid-19 health emergency. The survey targets are university rectors and directors, professors, and students.

ANVUR, also in response to a need represented at European level by ENQA (European Association for Quality Assurance in Higher Education), has promoted and established a working group to develop a survey and analysis of the teaching experiences made in Italian universities during the COVID-19 health emergency, also in order to offer useful elements in view of the strategies that the universities themselves will have to prepare once the current pandemic phase is over.

ANVUR has defined three online teaching questionnaires aimed at different targets:

- Emergency governance - Target: Rector / Director of each University
- Distance Learning - Target: Teachers

- Distance Learning - Target: Students.

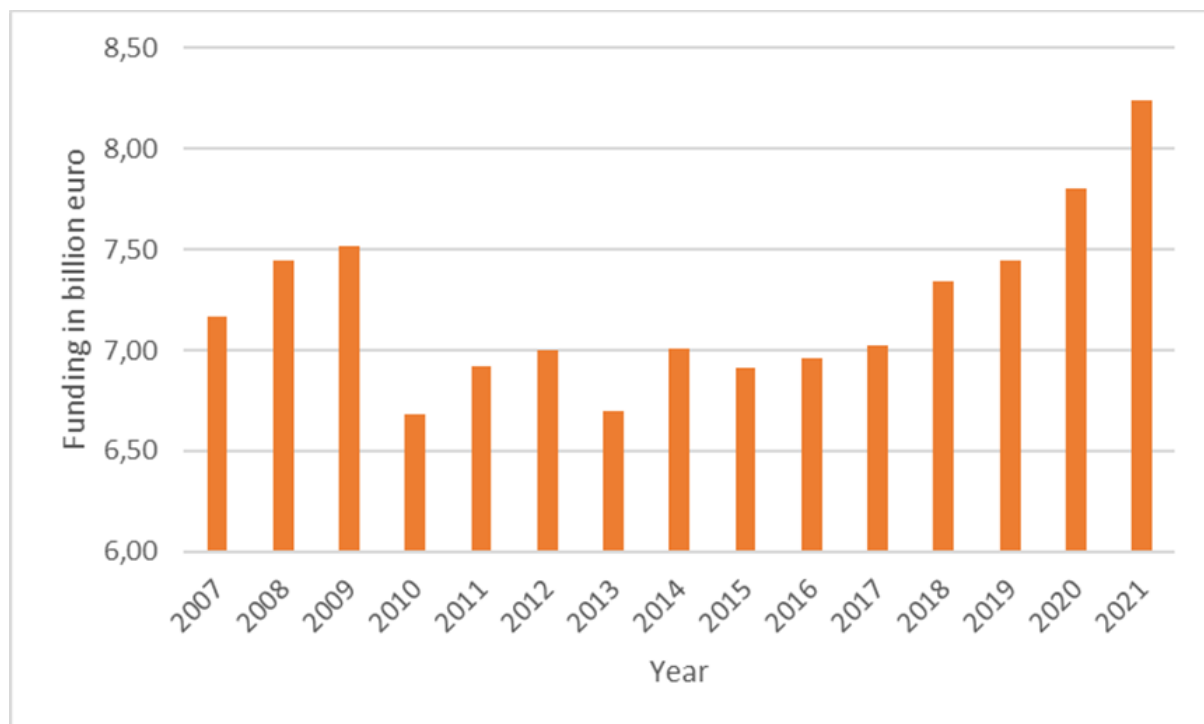
The reflections that may be made on the basis of the data acquired may facilitate the adaptation of the methods of teaching and providing services to students, also in blended modality that can be used in the future. The results will be reported in the Biennial Report on the State of the University and Research System (latest publication 2018) and will then be communicated to ENQA for a comparison between the different European experiences. The ANVUR survey on Distance Learning services provided by universities was launched on 14th December 2020 and ended on 8th February 2021.

2.3 National financing programmes

The National Recovery and Resilience Plan (PNRR)

Figure 1 shows the allocation of ordinary funds for Italian universities from 2007 to 2021⁷. The graph shows how the allocation of funds for HE suffered a sharp reduction in 2010 and then gradually increased but remained below the value of 2009 until 2020. Although the data reported for 2020 and 2021 are not definitive, concomitant with the pandemic, it seems that there has been a change in policies with greater attention to the resources devoted to Italian universities.

Figure 1: University Ordinary Funding (PNRR)



⁷ The values in 2020 and 2021 are esteemed

In this sense it is important to remember that, as already highlighted in the legislative framework, in 2020, the decree-law 23rd February 2020 "Urgent measures on the matters of containment and managing of the epidemiological emergency of COVID-19" did not include funding and 40 million Euro are foreseen for the digitalisation of schools (education, administration and students) but apparently not for universities in the 2020 Budget law. Nonetheless, the National Recovery and Resilience Plan (PNRR) allocates 31 billion Euro to the education and research sector covering the whole educational sector (Schools, Universities, and research centres).

In the PNRR 19.44 billion Euro go to education services (component 1 - C1) and 11.44 billion Euro in components and resources (component 2 - C2). In component 1 only 7.4% of funds are allocated to the university for scholarships (investment = 0.5 billion Euro), expansion of advanced university skills (Investment 3.4 = 0.5 billion Euro), and extinction of the number of doctorates (0.43 billion Euro). In particular, in investment 3.4 of component 1 "Didactics and advanced university skills" we intend to qualify and innovate university (and doctoral) courses, funding the following initiatives:

- Registration, over 3 years, of 500 PhD students in programs dedicated to digital and environmental transitions.
- Creation of 3 Teaching and Learning Centres (TLC) to improve the teaching skills (including digital skills) of teachers in universities and teachers in schools, across all disciplines, including traditionally less digital-oriented disciplines.
- Creation of 3 Digital Education Hubs (DEH) to enhance the higher education system's ability to offer digital education to university students and workers.
- Strengthening of higher education schools, through: i) the offer of courses and training activities to doctoral students enrolled in other institutions, to share their experiences and skills with the entire higher education system; ii) the consolidation of their role in the school-university transition, through orientation activities for school students.
- Implementation of 10 transnational educational initiatives - TNE - in collaboration with the Ministry of Foreign Affairs and International Cooperation.
- Internationalization activities of artistic and musical higher education institutions (AFAM) through the support of 5 internationalization projects of AFAM institutions, to promote their role abroad in the conservation and promotion of Italian culture.

Implementation will be borne by the MUR and will cover the entire period up to 2026.

Component 2, on the other hand, aims to support investments in the R&D sector, to promote innovation and the diffusion of technologies, to strengthen skills, promoting the transition to a knowledge-based economy. For this component 11.44 billion Euro of appropriations are foreseen in order to:

- strengthen research and promote the dissemination of innovative models for basic and applied research conducted in synergy between universities and businesses (6.99 billion Euro);
- support processes for innovation and technology transfer (2.05 billion Euro);
- strengthen research infrastructures, capital, and skills to support innovation (2.48 billion Euro).

Although the plan includes among the transversal dimensions the enhancement of access by women to the acquisition of STEM, linguistic and digital skills, in general, the initiatives for technological innovation seem to be linked to specific scientific fields, to the training of teachers, albeit to a much lesser extent, and to the transformation of companies. Finally, we can wonder if the funds allocated to the university will be sufficient to support a process of technological innovation that has seen universities confronted in the last decade with funding through ordinary funds that until 2019 was lower than those of 2009 (fig. 1) and with the low level of R&D spending. Italy still remains distant from the performance of other countries, registering an intensity of R&D expenditure compared to GDP (in 2018 equal to 1.4 per cent) significantly lower than the OECD average (2.4 per cent), both in public and private sectors (0.9% versus an OECD average of 1.7%). In this perspective, the recovery and support for public and private investment in R&D is an essential condition to recover the gap in the levels of the productive factors (capital and labour).

3. THE PERSPECTIVE OF NATIONAL DECISION-MAKERS

Introduction

Interviews with institutional actors took place between May and June 2021. It was not easy to acquire the availability of the identified referents, and two of them chose to write the answers after having received the questions instead of having an interview. On the basis of the shared thematic interview grid, the following actors were interviewed:

- the President of the National Agency for University and Research Evaluation (ANVUR);
- the President of the National Conference of Italian Universities (CRUI);
- the coordinator and the ICT - CRUI working group;
- the representative of the Management Office of the National Agency Higher Education Sector INDIRE.

Unfortunately, we could not interview any representative of the Ministry of University and Research who could have offered a specific informed perspective.

By means of a qualitative approach, the analysis of the interviews aimed at transversally identifying relevant dimensions in the way they are experienced by interviewees, directly involved in the process at national level. The analysis is enriched by the interviewees' opinions⁸ to highlight the interpretative and implementation dimensions acting at a local level, which are organized around three essential axes based on the interactions between the macro and micro-organizational level, aiming to highlight the interactions among levels.

The interpretative approach is the Callon's translation one (1986), which is defined as an ongoing process. Translation theory is a useful conceptual tool to examine the constraints acting in transnational agendas and local dynamics (embedded). It allows the reconstruction of the trajectories developed in the globalised

⁸ The following four interviews were carried out: ANVUR President; CRUI President; INDIRE manager; ICT / CRUI working group coordinator. Excerpts from the interview deemed significant are reported in the drafting of the report, in italics and in quotation marks, reporting only the serial number assigned to the interview to ensure the anonymity of the interviewed witnesses. The collected testimonies were analysed following the Grounded Theory methodology (Strauss, Corbin, 1990) which is based on the following three closely interrelated steps: the open coding necessary to "deconstruct the identified events and actions" (Gobo, 2008); the construction of labels in order to the interpretative framework (axial coding) and the selective coding necessary to explore the relationships between the different dimensions.

educational policies space (Ball, 1998). Investigating the process of building the European HE space through the digital revolution allows us to intercept the way in which ideas, problems and solutions are developed and affirmed. Theorists of translation (Callon, 1986; Latour, 1986; Czarniaswska, Joerges, 1996) point out that translations are affirmed through an unstoppable process of reproduction, deviation, appropriation, addition, betrayal, modification of declarations, disciplines, artefacts, etc., by human and non-human actors. This process takes place through the clash among different fields of force in which it is possible to recognize the "enlistment" processes aimed at favouring the acceptance and "mobilisation" necessary for the involvement of an increasing number of other relevant subjects in the process.

Supranational dimension

The analysis of the interviews makes it possible to identify the supranational dimension. Among the reference documents, there is the reference to the GDPR that defines the privacy policy. In the logic of mobility and digital citizenship, which are increasingly desired at supranational level, the authentication, the affirmation of a digital card, the authenticity, and the data protection are increasingly important and strategic.

I MACRO

I.1 Culture

I.1.1 Vision

The cultural dimension is the orientation to action for individuals and organisations at all levels (Schein, 2000) and, for this reason, we tried to investigate the vision of digital innovation in HE in our country. Above all, an attempt was made to understand the beginning of this transformation starting from the breakthrough introduced by the Bologna process in 1999, and subsequent acts and regulation including the keywords of the construction of a European HE area: ICT, Lifelong Learning, and inclusion, in the last two decades.

The few interviews carried out are not representative of the system but they can provide useful elements to understand and the degree of awareness and sharing of the chosen university model to understand the local configurations that are offered in HE, from supranational to national policies. Nonetheless, the level of uncertainty increases trying to investigate the expected university model, beyond rhetoric and the mainstream:

"I honestly can't say that. I think it's still in progress, right?! Because then there is the whole activity of adaptation also of teaching, information exchange, recognition of the activities that affect the Bologna process. This process [the crisis caused by the pandemic] has given a great acceleration to the construction of a common European education area" (Int. 3).

What emerges is the sense of urgency to act, which is why digital innovation is one of the central axis around which the Italian National Plan for Resilience and Reconstruction (PNRR) revolves. Although:

"Even before the pandemic, the Italian university had started the reflection, the experimentation, and the design characterised by their local specificity and heterogeneity. The health emergency, also thanks to the CRUI [coordination], has generalised and made "systemic" (Int. 2)

The dominant elements and keywords that can be distinguished from the current perspective are: emergency, digitisation, European guidelines.

1.1.2 Emergency

The use of digital technologies within the HE in Italy has undergone a radical transformation due to the management of the pandemic emergency, which is not yet accomplished although it is improving. This emergency has imposed an irreversible "transformation".

"The use of technologies for distance learning, already in use in some courses, has widely spread. The large and various use of digital technologies in teaching has forced teachers to review the contents and the delivery [of the lesson], opening a season of teaching experimentation that is still rapidly evolving" (Int. 2).

1.1.3 Overcoming the presence-distance dichotomy

This radical change has stimulated a rich and fruitful discussion within the universities, with the aim of understanding how the gradual resumption of post-pandemic activities must redefine the essential processes of higher education, overcoming the presence-distance dichotomy.

"While there is an inherent richness in face-to-face training, the availability of digital content capable of overcoming the traditional e-learning systems, and to be integrated into a blended modality seems to be the way forward. This way, the learner disposes of digital devices to access [learning] content that has to be adaptable, blended and contextualized in the environment that will not always be the traditional teaching room. It is necessary to support digital teaching contents to realize a blended teaching in order to maintain the educational value of the interaction with disciplinary experts, amplifying the effectiveness of the training experience. The possibility [to perform] distance interventions connected with IT allow us both the use and the delivery of content and training opportunities that overcome geographical (national and international) boundaries, requiring the definition of a one-own identity in a global training market. It is therefore vital to produce digital educational content that goes beyond the traditional tools used in e-learning platforms (e.g. presentations, texts and videos) that can be used to enrich integrated teaching paths." (Int. 4).

1.1.4 Digitalisation

Among the dominant rhetoric, "digital" is considered as one of the community and national strategic priorities, a cross-cutting priority to the sectors. However, the aim should be to:

"make the digitisation effective, technical at the moment. The technical tool should be adjusted of course", but the infrastructural dimension represents only a prerequisite for access from which to start on a more "qualitative" asset, that is, to safeguarding the social, relational and communicative dimension.

1.1.5 Integration

Another key dimension emerging from the interviews is the overcoming of the fragmentation characterising the changing processes and affecting both the education system and the country's digitisation. Digital development is conceived as integrated, in the sense that it must be able to embrace and transform all the sectors, acting on a skill and responsibility level:

"including the single university level (discouraging ideological forms of analogue fundamentalism), including the university system level (providing for larger interventions on areas that are predictable or already evident delays). It is integrated at the country-system level" (Int. 2).

1.1.6 European dictates

The reference point in this epochal change is detectable in the *"indications of the European Commission with regard to the Digital Action Plan which clearly regulates the need for a digital adjustment"* (Int. 3).

Within the framework of European guidelines, two priorities can be distinguished: **the dematerialisation processes and the mobility relationships**. Projects such as the Erasmus Without Paper, in which a series of initiatives are being relaunched, aim to enable HE institutions and students to digitalise the entire Erasmus mobility process.

With respect to the dematerialisation of relationships, connected to the different types of mobility, we can recall the effort towards the construction of environments, platforms and Apps allowing students to experience virtual mobility, by means of digital resources to *"accompany students to virtual learning, manage the entire documentary flow, supporting mobility, and favouring the digital mode. All online, therefore, with an interconnected system of platforms"* (Int. 3).

1.2 National Policies

The interviews highlighted that before the pandemic, the University remained

"a little further back also because maybe you didn't always have the perception [of the digital breakthrough] but you thought of a change over a wider period of time of 5/6 years. Thus, all the projection, the national and political programming was projected on a long term [...]. There had been no major interventions, not as incisive as we expect with the recovery fund, in which there should be funds for digital transformation in all sectors, therefore also the university sector"(Int. 3).

However, even in the absence of specific funds, especially for universities and digitalisation, the interviews show that is possible to reconstruct some essential steps that have contributed to redesign the digital transformation of the country following the European indications over the last ten years by means of the actions reorganisation, the regulatory redefinition, the economic resources, and the related strategies.

1.2.1 Actions

1.2.1.1 Reorganisation of the national governance processes and systems

Among the actions promoted centrally to support the systematic digital transition, we must mention the establishment of the Department for digital transformation. The Department implements the directives of the Minister on the subject and ensures the coordination and execution of digital transformation programs. The Department was established with:

- Decree of the President of the Council of Ministers (DPCM) of 19th June 2019 (Amendments to the DPCM 1st October 2012, Department for Digital Transformation and Other Structures);
- DSG of 24th July 2019, which establishes "the Internal Organisation of the Department for Digital Transformation";
- Ministerial decree of 3rd September, 2020: Changes to the DSG 24th July 2019.

The Department supports the Prime Minister for the promotion and coordination of the Government's actions, aimed at defining a unitary strategy in the field of digital transformation and modernization of the country, through digital technologies and is composed of four offices:

- technological area;
- administrative management;
- digital transformation;
- technological innovation.

"The goal is to fight the cultural digital divide of the Italian population to support the highest digital inclusion and promote the future technologies education, and supporting the country's digital transformation process" (Int. 2).

In 2012, in line with this approach, the Guidelines for the Digital University (Prot. n. 151/segr/DGUS/2012) were already published. But under the pressure of the pandemic, the Operational Plan of the Digital Skills Strategy was published in December 2020, containing the measures deemed necessary to break down digital illiteracy and develop a path of cultural change in all sectors of society.

I. 2.1.2 Design of integrated and coordinated actions

Through the following four axes which were identified in the Operational Plan, it is possible to highlight the effort to overcome the long-standing fragmentation of policies and competences that has always characterised our country, to favour the adoption of a logic capable of promoting integrated and coordinated policies and actions, aimed at overcoming the traditional system of policies segmented on the Taylor-Fordist model:

A design that can be read as an attempt to enlist and mobilize new forces to institutional actors around a shared and daring goal, considering that all the regulatory efforts identified by the documentary analysis have not, however, produced significant changes in the expected digitization of the country over the last ten years.

- Education and Higher Education: development of digital skills within education cycles, with the coordination of the Ministry of Education and the Ministry of Universities and Research;
- Labour force: coordination by the Ministry of Economic Development and the Ministry for Public Administration;
- ICT specific skills: coordination of the Ministry of University and Research and the Ministry of Economic Development;
- Citizens: coordination of the Ministry for Technological Innovation and Digitalisation.

I. 2.2 Regulatory tools & plans

To redesign the system, a series of regulatory and guiding tools were drawn up to redefine the system of rules altered by the digital transition. A turning point of this process is the Digital Administration Code <https://docs.italia.it/italia/piano-triennale-ict/codice-amministrazione-digitale-docs/it/v2018-09-28/index.html> (DL 7th March, 2005, n. 82) which, among other objectives, has "basic training and the development of a digital society where services centre for citizens and businesses; promote digitalisation in compliance with environmental sustainability; encourage standardization, innovation and experimentation in the field of public services".

"The predominance of state universities makes the digital transformation a key element of the process which has been undertaken by the government, in accordance with the Code of Digital Administration <https://docs.italia.it/italia/piano-triennale-ict/codice-amministrazione-digitale-docs/it/v2018-09-28/index.html> and the three-year plan for information technology in public administration" (Int. 2).

Finally, on a different level, the 2020 Action Plan represents the new framework to which all the national institutions and the policies should aim as it redefines the European digitisation policy, within which *"institutions have committed themselves to implement the European perspective through the ECHE subscription, the Erasmus Charter"*(Int. 3).

I. 2.3 Economic tools

Considering the economic resources, for many years the digitisation process has been strongly characterised on the one hand by the universities' autonomy and on the other hand by very different speeds and projects in the various areas of the country.

In this situation *"universities, as autonomous expenditure centres, were supposed to plan their digitalisation based on the modest resources available"* (Int. 2.).

This ended up creating a dichotomy, if not at times a conflict, between the conventional universities which based the distinctive element of their offer on face-to-face courses and the online universities, almost exclusively private, that proposed an alternative by inserting themselves in that market niche already presented in European recommendations that since 2000 have been expressing the need to invest in permanent training, lifelong and wide learning, and inclusivity by using digital spaces and resources.

The discrepancy between what was declared in the norms published and the financial support provided to support them indicates only an apparent mobilisation of the institution regarding the digital theme.

In regard to financing, there are many expectations relating to the PNRR and to the 4th mission dedicated to research and education.

"The PNRR foresees about 15 billion Euro for universities and research. Whether there are many or few obviously depends on the point of view. If you look at the decades in which the state has slowly evaded the commitment-duty to invest in the sector, 15 billion represent a substantial change of course, however, if we compare them to the total figure (almost 250 billion) and calculate the new percentages of GDP, even in the face of this step, the distance that separates Italy from the countries that focus on knowledge is still substantial and discouraging. Having said that, having new funds although essential for a system in serious difficulty even before the pandemic (1 billion Euro and more than 10 thousand researchers lost in a decade) is necessary but not a sufficient condition for a relaunch. Much depends on how the funds are used, on choices that must be both courageous and responsible" (int.2.)

Listening to the interviewees we can see large agreement about the idea that there are *"Extraordinary investments necessary to ensure a widespread diffusion of connectivity in university structures in order to adequately support integrated teaching"*.

For this reason to support public universities in this development process *"Measures are being studied to simplify the process of acquiring ICT goods and services and recognize the extraordinary nature of the interventions that cannot be supported with the constraints of current expenditure"* (Int. 4).

I. 2.4 Accompaniment strategies

Considering the fact that no legal provision is self-enforceable, and no change can take place by decree, it must be recognized that already starting from 2012, to encourage the reflection around the necessary and desired change, numerous working groups have been set up at different levels, and with different objectives

among the various actors that feed the governance space on a meso-institutional level: CRUI, ANVUR, INDIRE. This action can fully fall within those "recruitment" strategies that can be identified and circumscribed thanks to the theory of transfer, reconstructing the network of human and non-human actors who contribute to the emergence of a new configuration of forces and the problematisation of a policy issue that has long been summarized both in the digital skills gap in the context of European comparisons (DESII...), and in the labour supply-demand mismatch (...).

II. MESO-INSTITUTIONAL LEVEL

II. 1 Actors

The institutional actors that make up the digital governance framework are many, therefore the condition of fragmentation of the interventions and the difficulties of coordination and alignment with the times and objectives are understandable.

On a macro level, the significant actors that trace the path are the two Ministries: the MUR and the MIUR which accredit the INDIRE National Agency (responsible for the ERASMUS program) to the European Commission. The two Ministries direct the achievement of the objectives of the INDIRE Agency with which they establish the strategic-national priorities. The implementation of community guidelines passes through the two National Authorities who sit at the strategic community tables.

However, the national agencies, for Italy the INDIRE on the educational front, seem to be the primary bodies through which European policies, recommendations and guidelines are "translated into practice" in the countries. The Erasmus program is the operational tool through which the key messages of the development paths pursued by the European Community are conveyed, to create *"unity, community, community spirit, active citizenship.... In short, the ERASMUS program is the tool through which to convey innovative policies! And INDIRE is the operational leg of the European community to put this change in action"*(Int. 3).

The inter-institutional complexity therefore requires an effort aimed at recomposing this fragmented picture. With this objective in mind, networking processes are nurtured and aimed at encouraging adaptation, up to the National Authority level, to the national strategies and priorities to be adopted. In this way, the national agencies become subjects of mobilization on the territory, contributing to problematise the main themes around which change is at stake,

"It becomes a network on several levels, it becomes a network at community level through the various agencies, because clearly there is an adaptation to community standards by each agency, they exchange best practices, information, etc." (Int. 3).

Among the other major actors we must consider the AGID which promotes the digitization of the country and the CRUI which proposes itself as:

- tool for directing and coordinating university autonomies;
- privileged place for experimenting with models and methods to be transferred to the university system;
- laboratory for sharing and disseminating best practices;
- modern service centre available to universities.

Since 2001, the Rectors' Conference has been supported by the CRUI Foundation <http://www.fondazionecru.it/> which has the task of developing interface actions between the university system and the society with the aim of supporting the cultural and economic development of the country.

Finally, another key actor is the national evaluation agency ANVUR which works in synergy with the Ministry to define the quality standards of teaching, research and the Third Mission and guarantee the initial and periodic accreditation processes, the qualification of the body teacher and evaluation of research and the Third Mission. Since its establishment, it has also been committed to evaluating universities and online courses, also to deal with a widespread prejudice on the quality of this offer.

Going down from the meso-institutional level to the micro-organisational level, within the framework of the autonomy of the university, an important role is played by the new generation of Rectors who, from the Gelmini Law onwards, have seen the average age radically lower; and the Digital Officers appointed for each PA (therefore also for the University), with the responsibility of identifying the areas in which to make services more efficient through digital transformation.

Furthermore, even within the same cultural-regulatory framework in terms of European recommendations, university autonomy, Quality Assurance processes, from an internal organizational point of view, it is possible to imagine significant differences between public universities, private, conventional and online universities, with regards to the methods of definition, objectives and priorities identified in the three-year strategic plan that each university draws up to define its own development plans. The game of digitisation is also played on the level of digital visioning and the e-leadership capacity of academic bodies therefore represents an essential piece within this field of forces.

II. 2 TRANSLATIONS INTO PRACTICE

As the scientific literature that adopts the perspective of translation to the analysis of policies teaches (Callon, 1986; Latour, 1986), any normative text passes through a complex process of "translation into practice" which helps concretize, through a continuous process of reinterpretation and adapting the dominant perspectives at the macro and meso levels.

In this process of translation and action it is useful to dwell both on the processes that give substance to the implementation, as well as on the "betrayals", adaptations and re-interpretations that inevitably emerge from the negotiating effort. An effort that is part of the framework of government instruments which, starting from 2010, with the so-called Gelmini Reform, and with the consequent establishment of the National Evaluation Agency (ANVUR), refer to the European standards and recommendations from which they themselves descend.

The elements that appear as the most relevant in the analysis of these few testimonies are: the design of system actions for the research and construction of the inter-institutional alliances necessary to overcome the fragmentation of the system; adaptation to supranational guidelines; acceleration and reaction.

II. 3 Government tools

The main tool for governing the transition to a new university model refers to the European standards for quality assurance in higher education, from which the whole national evaluation system for teaching, research and Third Mission derives.

The quality process provides for different levels of responsibility and verification which have now become fully operational in the entire academic system, not without tensions and conflicts.

II.3.1. SYSTEM

On a system level, *"the quality assurance models in use in the country are already formally provided with specific features dedicated to information technologies for educational use. In particular, the AVA system of ANVUR (in line with the Community guidelines of ENQA and with the ESGs) already includes quality assurance criteria based on the prerogatives of online teaching and learning" (Int. 2).*

However, it should be specified that the digital dimension within teaching is taken into consideration only in online universities and in degree programs delivered electronically or blended beyond a certain threshold, thus allowing us to glimpse at a sort of dystopia with respect to digital integration in educational processes.

II.3.2 AQA

The European reference processes and standards have now laboriously entered full capacity since 2012 with the launch of the AVA (Self-Assessment, Evaluation and Accreditation) system, which is why "they are implemented in the teaching systems" and at all levels of the University.

II.3.3 Digital platforms

The determination of standards also passes through the pervasiveness of platforms aimed at guaranteeing interoperability, authenticity and safety, actively contributing to the standardisation of processes. These non-human actors have their own transformative force being able to influence choices, participation, research, career processes etc. It is no coincidence that we talk about enabling technologies.

Among these platforms, EduGAIN is the inter-federation service that connects and allows cooperation between digital identity federations from all over the world. Access to eduGAIN is allowed only through an identity federation and therefore to participate it is necessary to have joined an existing federation. The most accredited Italian Federation is the IDEM-GARR network. Most of the universities and all the major Italian research institutions are part of IDEM. Italian Federation of Universities and Research Bodies for authentication and authorization. A silent and invisible solution through which the global research space is built without fuelling any conflict, reflection or negotiation around the theme of access to research data and control of the same digital infrastructures. The GARR consortium is a non-profit association founded under the aegis of the Ministry of Education, University and Research, to which CNR, ENEA, INAF, INFN, INGV and all the Italian universities represented by the CRUI Foundation (about 83, all online universities are excluded).

Another significant non-human actor, able to guide the processes and exercise its own agency is, for example, the Erasmus + program, aimed at the dematerialisation and virtualisation of all mobility and internationalisation processes.

II.3.4 Adaptation of European standards

In terms of adaptation to European standards, the two reference agencies, each for its competence area, are an active part of the international networks that contribute to supporting the adaptation to European standards. "ANVUR is part of the ENQA network where a debate about technological development and how the university must respond to this challenge was developed" (Int. 1); while INDIRE is part of the community network of

National Agencies for the ERASMUS programme and is very active in promoting the entire programme throughout the country.

From the point of view of the adaptation processes, a challenge is given by "The procurement process of the necessary ICT tools which will have to be adapted to the speed of development and evolution of the entire sector, in order to ensure that young people have access, in compliance with the protections provided, to the technologies in progress on which they will find themselves operating once they exit the training course"(Int. 4)

II.4 SYSTEM RE-DESIGN

II.4.1 System actions and integration

The effort aimed at building inter-institutional communication processes and flows and coordination mechanisms, capable of overcoming the traditional fragmentation of responsibilities, typical of traditional policies under the responsibility of specific ministries, can be observed in the attempt to enforce "integrated policies", multi-actor; multilevel (Capogna, 2006), as can be seen from the following testimony.

"In Italy, the MITD (Ministry for Technological Innovation and Digital Transformation) dictates the strategy for the implementation of the European Digital Agenda which is embodied in the Three-Year Plan for IT in the Public Administration drawn up by the AGID (Agency for Digital Italy), the body that presides over the digitization of the Public Administration. CRUI and AGID signed a framework agreement even before the "digital leap" imposed to the system by Covid-19, and have been involved for years in the drafting of the Plan and in the realization of joint actions, designed to improve Italy's European positioning with respect to the 'DESI index "(Int. 4).

However, the integration challenge is not only on the institutional side. The Digital Europe program underlines the importance of involving the industrial fabric, in order to ensure that the contents developed also address the needs of the production world. But on this front, cooperation on a territorial level is very patchy, and it strongly depends on local contexts and on the supply chains of reference. The processes of "enlistment" on the territories are a new challenge to overcome.

II.4.2 Acceleration

As already transpired, in general, the digital challenge for the so-called conventional universities has not been a priority over the last two decades, because it has been relegated to the space of autonomy that has developed in a context of decreasing resources. But the pandemic has resulted in an acceleration that no one imagined, nor expected, both on the teaching side and on the side of research and administrative processes themselves. Italian universities turned out to be quite ready with respect to this challenge and this is because *"despite everything, many projects and experiments had been conducted in patches, in stop and go, and this allowed to develop many skills that were dispersed in the universities" (Int. 2).*

But, above all, it allowed the convergence of many by reorganizing the force field for the common emergency. Universities represent one of the first sectors of the public administration that have achieved a complete emergency digital transition in the face of the pandemic threat. In determining this immediate response and the ability of the universities to react, a decisive coordinating role was played by the Rectors' Conference which tried to *"put into the System the contributions that the various Universities, in their autonomy, have shared" (Int. 4).*

"Within a month, 100% of the courses were restructured through various remote teaching methods. This courageous push provides a very accurate picture of the capacity to mobilize local and systemic energies "(Int. 2).

"Distance learning has become a necessary methodology, the system has proved to be ready and we are convinced that even with the recovery this dual system will give good results" (Int. 1)

II.4.3 Gap

This great social laboratory has highlighted as never before the great digital divide that occurs at all levels, showing that it is no longer possible to postpone a critical reflection on the present and future of the digital university, as the following testimony also underlines.

"This has happened and continues to happen with unequal speed and consistency in the various areas of the country and the next step, in the overall governance of the phenomenon, consists precisely in bridging the delays without retaining the excellences that move, on this and other fronts, with a different pace "(Int. 2).

This obligatory reflection also passes from the understanding of what has been experienced within the complex educational dynamic. To this end, the various actors involved at the meso-institutional level have done their utmost to activate systems for collecting information useful to provide an informed picture on the state of the strategies and solutions adopted by universities and teachers to face the emergency and reflect on the experience. Therefore, different types of questionnaires (teachers, students) have been developed and collected by ANVUR, but also by the national coordination of the Quality Deans and by the national coordination of the Evaluation Units, the same thing has also been done on an organizational level by many universities and research groups.

Certainly, the first consideration to be drawn after this experience is the need to invest strategically in staff training and incentives. But, above all, the need to pay attention to the great risk of "clearing" e-learning as a form of innovation and exchanging the provision of content for training. In fact, if before the pandemic there was a widespread prejudice towards training mediated by digital technology, with the emergency everything has become possible, with the simple equation of transferring the transmission model of the classroom into an online environment, where lessons can be replicated and one-way and artisanal video-lessons of dubious quality and effectiveness can be uploaded. Apart from the doubt that remains about the usefulness of this mode, it would be useful to ask the organizational and environmental impact of this trend towards the accumulation of megabits that require increasingly powerful servers.

With regard to the "production of interactive digital educational contents and platforms capable of delivering them, measures are being studied to support them through investments for their creation and for the training of teaching staff". Furthermore, when addressing the issue of teaching quality, it is necessary to ensure, in addition to the investment of human capital, adequate "recognition of the commitment to innovate in teaching careers", otherwise no teacher will be motivated and responsible for taking care of their professional development to keep up with the times.

II.5 ORGANISATIONAL REDESIGN

II.5.1 Internal innovation

The attempt to initiate strategic thinking regarding transformation was also incorporated by the new Digital Administration Code (CAD) which establishes the Digital Transition Manager for each PA. The Code takes its first steps with Legislative Decree no. 82/2005 but has undergone several changes and additions until the last Legislative Decree 16th July 2020, no. 76 converted, with amendments, by Law 11th September 2020, n. 120. This adjustment effort obviously also affected the institutional actors who crowd the meso-implementation space of the university system. The Digital Officers have been appointed both for INDIRE and in the Ministry, as well as in all the universities that have long since embraced the challenge of digitizing procedures and many services for teachers and students. With the awareness of the impossibility of starting any effective process of change from the outside, and with top-down logic, we tried to insinuate the seed of innovation from the inside by identifying specific responsibilities in terms of digitisation, within a single manager referent. This implies the need to invest in training (skilling and reskilling) of all technical, administrative and teaching staff.

II.5.2 Innovator networks

The process of recruitment and mobilisation also passes through transversal actions. Considering the complexity of the challenge dictated by the recent Digital Action Plan, the adjustments foreseen also for the university as part of the 2025 strategy, and the national and community priorities *"it was decided to create a network of digital officers among the contacts appointed from the individual national agencies that can collaborate and exchange good practices"* (Int. 3), confirming, once again, that the human cooperative dimension represent a strategic asset that cannot be ignored. It should be emphasized that this system is in the start-up phase in consideration of the fact that *"some of the institutes have already communicated to the Ministry, and to the agency, the appointment of a digital officer of the institute, then the appropriate steps will be taken"* (Int. 3).

The person in charge of the digital transition, within the structures, does not necessarily have to be *"an IT technical figure but a figure capable of having a positive impact, not only in his own institution, especially for large institutions, to actively affect the necessary steps to be taken for digitisation"* (Int. 3).

II.5.3 PILOT EXPERIENCES

The attempt to "translate into practice" the European proposals and recommendations necessarily comes to terms with the experimentation of pilot projects spread patchy throughout the territory, between research groups and with respect to diversified objectives.

Experiments on which the European Commission itself is active with some funding, the ERASMUS + programme in primis, which represents the operational arm of the transfer of European recommendations, or other projects, such as, for example, *"the Virtual Exchange project, aimed at enhancing methods of learning in a virtual and innovative way, through the establishment of classes and the exchange of information between students, thanks to the presence of a tutor who encourages online encounter between students coming from different parts of Europe, sometimes even the world. This is a project that was in construction, it was a precursor, COVID accelerated everything"*. (Int.3)

Here are the different changes that succeeded each other to try and define the digital administration: legislative decree of 4th April 2006, n. 159; Law 24th December 2007, n. 244; Law 28th January 2009 n. 2; Law 18th June 2009, n. 69; Law 3rd August 2009, n. 102; legislative decree 30th December 2010, n. 235; Law n. 221/2012 (where we find the principles of the Digital Agenda); Law n. 98/2013 (doing decree); legislative decree n. 179 of 26th August 2016 (Madia reform).

II.6 CHALLENGES

II.6.1. National gap

It is useless to recall the national gap that the country system records in terms of the number of students in HE. *"Italy is last or second to last in Europe in terms of the number of students who enter the university"*, this means that we must focus on inclusion through policies for the right to study but also through a more extensive and more complete training offer, that needs to be able to make use of that digital technology that since the early 2000s was indicated by European documents as a resource to combat all forms of marginalization and promote skilling and re-skilling processes throughout life.

Other imported axes that present themselves as challenges to be guarded by the system are:

- research doctorates (on which ANVUR is working) both to align them with European standards and to understand how they can or must be rethought to capture and enhance digital transformation in a strategic segment for training and innovation;
- recruitment and enhancement of university teaching, especially in consideration of career progress.

Another challenge involving universities in Italy concerns the need to overcome the gaps that act at different levels (infrastructural, economic, cultural, professional, etc.), negatively affecting the quality of the offer itself and the possibility of development for universities, teachers and students. Often:

"Smaller and younger universities have more responsiveness. In more structured universities there is also more effort in implementing digitization policies, also due to the administrative human capital which in many universities has an advanced average age. It is necessary to proceed with the dissemination of digital culture by means of intense information and training activity at all levels. If it is true that the lesson also passes through a suitable instrumentation, teachers must be ready to adapt to these changes and processes" (Int. 1).

II.6.2 ICT Resources and Infrastructure

The last challenge certainly concerns the investment plan which has experienced a dramatic decrease over the past ten years. As per digital innovation specifically, this has been relegated, on the one hand, to the autonomy of universities, and on the other hand, to the very different design forces in the various areas of the country. In general, *"a process in continuous evolution and characterized, at least so far, by a continuous alternation of impulses and slowdowns" (Int. 2)* with obvious difficulties both with respect to the possibility of quantifying the resources invested to support the transition to new model universities, and to give continuity to the significant experiences gained within specific realities. There is a transversal conviction that in order to support the development of digital maturity in universities, it is necessary to focus on "integrated" digital development.

"That is, integrated at the level of the single university (discouraging ideological forms of analogical integralism). Integrated at the university system level (providing for more substantial interventions where delayed areas are foreseeable or already evident). It is integrated at the system-country level" (Int. 2).

According to the interviewees, this means that extraordinary investments are necessary to ensure a widespread diffusion of connectivity in university structures in order to be able to adequately support integrated teaching.

II.6.3 ORGANISATIONAL DIMENSION

Among the most important challenges that our higher education system is facing with respect to digital innovation, on the organizational front, universities are facing challenges similar to those of other institutions. First of all, the dematerialization of processes, but also an overall revision of the relationship between time and work space, with the predictable transition from "time-based" to "objective" work. This completely changes the internal processes, as well as the relational, hierarchical and communicative dynamics. A Copernican revolution for a bureaucratic organization called to completely redesign internal processes, the systems of motivation, incentives, careers and control.

The main challenge is to provide our young people with a "digital method", that is, not only digital knowledge and skills, but a new paradigm to navigate the future complexity, managing to keep up with the swirling changes that await them. So much so that they decide to stay in university, as much as they prepare to face the world of work "(Int. 2).

This entails the need to redefine the educational processes and the overall organization of processes in a "digital-first" perspective. But, at the same time, it also means:

- creation of digital content and platforms for their use through personal devices, according to the logic also promoted by the European Union which is now in the BYOD (Bring Your Own Device) label;
- review of the job placement process in light of the changes imposed by the COVID-19 emergency which completely redesigned the world of work, bringing to light the need to train and retrain the young and old in new and varied skills;
- definition of a sustainable and quality integrated teaching model;
- review of the quality assessment process, driven by the transformations underway.

II.6.4 Professional Development

This introduces another essential theme concerning the recruitment and training of university staff (teachers, researchers, staff, students), with specific reference to the development of digital skills and the enhancement of their contribution in evaluating their careers.

"The academic communities fall within the Public Administration, albeit in different ways. Their continuous training is required by current contractual legislation, to which are added the guidelines which, among the numerous principles, provide for a new user-centred public administration, which considers data a common good and uses the open code. as a guarantee of transparency and accountability. Specifically, the university is by its very nature a frontier PA that requires the development of integrated, articulated strategies to be strongly tailored to the context. It is sufficient to take as an example the figure of the student who is at the crossroads

between the administrative-organizational plan (as a de facto user of the digital services that the university provides) and the educational one (as a learner to form the base to a new “digital method”) (Int. 2).

II. 7. SWOT analysis

In concluding this brief examination aimed at problematising the debate and the field of forces that unfold around the digital challenge in Italian universities, we will now try to collect the suggestions that emerged through the interpretative key of the SWOT Analysis that allows us to reflect on the strengths, weaknesses, opportunities and threats of this epochal change, aimed at integrating digital technologies in universities to improve their role as actors of innovation and social promotion.

II. 7.1 Strengths

Among the strengths determined by the pandemic crisis, following the statements collected, there is:

- the “complete diffusion of digital technologies in teaching;
- the debate aimed at imagining and redefining the structure of teaching in the post-COVID-19 era ”;
- "the sustainability of an approach in which students use their devices for the use of educational content supported by a network infrastructure capable of supporting the traffic generated";
- the diffusion of experimentation;
- the launch of an extensive debate on how to enhance and integrate digital technology in the university;
- the mobilisation and aggregation of new actors around the common challenge.

II. 7.2 Weaknesses

Among the weaknesses are:

- "The absence of standard formats for digital interaction between different universities, in order to simplify sharing the same processes";
- "The use of digital technologies in teaching largely governed by emergency measures";
- the absence of a medium to long-term digital vision in academic governance to accompany the development of skills and organizational development models from bottom to top.

II. 7.3 Opportunities

Opportunities go hand in hand with strengths. Having new tools for more effective learning, as well as for a more agile and dignified work of the various academic communities (teachers, researchers and staff), opens up countless opportunities such as, for example:

- "access to a potentially larger pool of students thanks to the use of digital technologies";
- “the simplification of processes in the transition to a digital-first approach”;
- the development of skills more oriented towards the digital revolution 4.0;
- possibility to take up the challenge of digital citizenship at all levels.

Furthermore, it must be recognized that digitization is a showcase, to sponsor one's own institution, and to present the activities that are carried out through a range of major channels, at the same time enriching the

panel of contacts with which to collaborate and experiment innovative and captivating learning methods that can make a difference.

II. 7.4 Threats

There is great convergence with respect to the idea that digital must remain a technology "at the service" of well-being and knowledge.

"Digital resources streamline administrative processes and can offer new tools for innovative and resilient teaching. However, both of these strengths must continue to take into account the human element that underlies them. If idolised, the strength runs the risk of quickly turning into the most extreme of weaknesses. On this front the university, as a place for the development of knowledge and its learning, can represent a bulwark of "humanity" of considerable importance "(Int. 2).

"You cannot think of replacing the educational ecosystem of the classroom with a recorded webinar, a remote lesson or a synchronous session on the platform, it means not having understood the profound meaning of the word learning. Digitization is the equivalent in this millennium of what mechanization was in the last one. Whether machines replace human beings or facilitate them has never been and never will be a question of destiny, if anything, of political choices, in the healthiest sense of the term" (Int. 2).

It is also necessary to consider among the most relevant threats the digital divide which requires *"to guarantee access to training for all classes of the population"* and the *"dispersion of the wealth generated by interactive teaching that gives way to the homogenisation of contents"*.

III. MICRO-ORGANISATIONAL

III.1 EDUCATION - TEACHING / LEARNING

III.1.1 Digital University

Talking about digital universities means addressing the issue from a systemic perspective, to "focus on an "integrated" digital development that is, integrated at the level of the single university (discouraging ideological forms of analogical integralism); integrated at the university system level (providing for more substantial interventions where delayed areas are foreseeable or already evident). It is integrated at the system-country level. Imagining an extremely digitised university, capable of competing in a competitive way with the most advanced areas of the planet, but out of alignment with the rest of the "fabrics" that make up Italian society, would obviously be a contradiction "(Int. 2)

In 2012, the e-Gov Plan provided for the implementation of the Digital University Project against which the guidelines for the Digital University were drawn up which define the dematerialization processes of administrative services (digital registration of exams, online registration, dossier digital student, electronic data exchange between universities and ministerial databases, adoption of VoIP systems, federated authentication of users to networks and online services, digitization of graduation and online payments). But obviously the theme of innovation in teaching and research has remained the responsibility of the university, which seems not to have caught the wind of change at that juncture. Today the need for *"innovation in teaching, interpreted from a transversal perspective to also include digitisation"* is evident in order to take charge of:

- redefinition of educational and organisational processes from a digital perspective;

- creation of digital content and platforms for their use through personal devices (BYOD);
- review of the job placement process in a post-COVID era with a changed labour market;
- definition of a sustainable integrated teaching model;
- review of the quality assessment process in the light of a digital university (Int. 4).

"There are certainly universities that are at the forefront, that already have a good level of digital adaptation, already have a mentality pushed towards digital, their professors are at the forefront, they are people already hinged in international cooperation processes, so it's even easier isn't it?! The difference within a university is also made between departments, by type, by number of institutions. The difference is always made by people, will, ability and so on. The weaknesses are the adaptation of the infrastructures and the equipment made available because there are those who have had the opportunity to buy them and those who have not! And therefore, not all have always adapted to respond to digital adaptation" (Int. 3).

III.2. Learning-teaching

During the "digital leap" teaching and learning were dominated by the "distance" formula. However, the very nature of the student-teacher relationship requires the communion and exchange that only co-presence allows. This pushes towards hybrid teaching methodologies in which digital becomes one of the many tools available to the educational ecosystem to improve learning. With this in mind, *"even the spaces and times of teaching will have to be rethought and modified, with a significant impact on buildings and logistics" (Int. 2).*

On the learning front, it is necessary to think of *"integrated teaching through the rethinking of participation in specific activities such as workshops and lessons in a broader framework, capable of harmonizing the use of purely digital content with interactive and experiential ones" (Int. 4).*

In the same way, the way to carry out the normal internship and / or laboratory activities that accompany the training of certain figures and skills must be rethought. There is an inevitable ferment around this new challenge.

In this way, learning becomes multidimensional and acts through two privileged channels.

The first is *"related to the virtual adaptation of the procedures and therefore to the delivery that can take place in virtual mode" (Int. 3).* And this requires rethinking both the practices, methodologies and techniques best suited to involving students through the virtual channel, and the objective learning contents that cannot be focused only on teaching subjects but must include work on soft skills, through sharing virtual experiences.

The second looks at virtual mobility which obliges all institutions to think of innovative strategies to act on: internationalization; mobility of teachers, students and researchers, multiculturalism; international cooperation and globalization.

III.3 Research

Research is certainly one of the most important areas and the research doctorate, on which ANVUR is making a proposal to the Ministry, aims to be in line with European standards. In addition, the recruitment and enhancement of university teaching; strategic actions on the right to study and support for students, according to the interviewees must be strongly strengthened, also in order to recover the gap in terms of the number of students in HE in Italy, which is last or next to last in Europe for the number of students who access at the University. (Int. 1).

III. 4 Third mission

On the front of the encounter with the world of work, the main challenge is to provide our young people with a "digital method", or rather *"not only digital knowledge and skills, but a new paradigm to navigate the future complexity, managing to remain at pace with the swirling changes that await them. So much so that they decide to stay in university, as much as they prepare to face the world of work"* (Int. 2).

III. 5 Internationalisation

Internationalisation is strongly supported by the European Community which, through the ERASMUS programmes, has been involved for some time in the construction of the European space. In this regard, the European Community provides a series of digital platforms that are already compulsory to starting from the 2021-2017 programming, in order to standardise processes and govern the flows of information and data, in exchange for a series of services to be offered based on identification through digital identity and accreditation systems for the institutions providing the service.

"The situation is centralised, the Commission recognises the eligibility to participate in the Erasmus programme"; by signing the Erasmus Charter for Higher Education", a passport that any Higher Education Institute wishing to participate in Erasmus + 2021-2027 activities must have, from the mobility of individuals to cooperation projects for innovation and good practices.

Summary remarks

Reading the process of construction of the European space of the HE, driven by the digital revolution, by means of the theory of translation, allows us to observe the way in which the force fields are configured in the framework of the network of human and non-human actors who contribute to its problematisation and advancement. It is thus possible to isolate institutional actors acting at different supranational and national levels of government (Commission, MI, MUR, INDIRE, ANVUR, AGID, etc.), collective (CRUI, GARR Network) and organizational (University) to examine the words key around which the various interests at stake are aggregated. Digitisation and integration are the new mantra of change, under the pressure of the emergency around which a precise space of policies is outlined, pushed by the supranational government, to face the age-old problem of the digital gap that all of Europe, Italy in the first place, suffers in the international comparison.

The causes of this delay are traced to the digital divide that acts at the different infrastructural, economic, cultural, cognitive and emotional (...) levels that have left the university, in its financial and statutory autonomy, alone, and without resources, before the weight of an epochal change.

For a long time, the solution was sought on a regulatory level, as the chapter on this analysis highlights, without however achieving the desired effects in the absence of a real investment aimed at aggregating interests, forces and dispersed skills, in the varied panel of actors that animate the field.

The pandemic crisis has shifted attention to the emergency and resource level, relying on the positive effects that the injection of resources introduced by the PNRR can bring to the system, thus determining a generalised improvement. But the central theme seems to remain the absence of a renewed cultural perspective capable of redefining the role, mission and objectives of the post-pandemic university, as a result of which redesigning a model of university that, abandoned to the "ivory tower" can act in the global network determined by the digital revolution.

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II PART. FIELD RESEARCH: THE NATIONAL CASE STUDY OF E-CAMPUS

Introduction

e-CAMPUS online University was established by Ministerial Decree on 30th June 2006 and is part of the innovation space introduced by the Decree of 17th April 2003 (Moratti-Stanca). This decree attempted to adapt the Italian university system to the European prospects of renewal mediated by Information and Communication Technologies, already widely called for at the dawn of the third millennium⁹.

e-Campus is a private university set up by the e-Campus Foundation for University and Research, one of whose primary objectives is to:

- interpret and respond in a new way to the demand for training of young people and adults;
- offer a holistic cultural proposal capable of training people and not just professionals. e-Campus offers training in "skills with a technical-scientific content, but also with a relational, value-based, managerial, cultural and ethical content" (promoting body/promoting organisation).

e-Campus University is inspired by principles of inclusion and, according to the reasons for its establishment, it affirms that: "The root of social discomfort, today, is no longer a lack of resources and means, but a lack of knowledge and expertise" (Promoting body/promoting organisation).

1. University policies

Building on its long experience in vocational education and training over the past decades, the e-Campus Foundation aims:

"to make a qualified contribution to the vocational education and training system (in the broadest sense of the term and not only in the specific sense defined by the Moratti reform) in Italy, paying particular attention to territorial demand, to the professionalisation of curricula, to the improvement and strengthening of teaching-learning systems by developing basic and applied research on learning, to the technical-scientific, didactic and organisational support of bodies and institutions operating in the field".

In the founding documents of the e-Campus Foundation the mainstream is anticipated, which has become dominant with the entry into operation of the AVA (Self-Assessment, Evaluation and Accreditation) system. The mainstream requires universities to carry out a careful analysis of skills needs and employment prospects when designing a new degree programme.

⁹ European references: Action Plan of the Commission of the European Union of 24 May 2000; eLearning Action Plan - Designing tomorrow's education' of 28 March 2001; Resolution of the Council of Education Ministers of the European Union of 13 July 2001 on e-learning (2001/C204/02); Proposal for a Decision of the European Parliament and of the Council adopting a multiannual programme (2004-2006) for the effective integration of ICT in education and training systems in Europe (eLearning Programme).

The organisational and training proposal of e-Campus seeks to respond to the issue of scholastic failure and low productivity of the Italian vocational education and training system, which has been acknowledged by many "in the weakness of its connections with other systems: economic-productive, administrative, scientific, social and cultural".

With this in mind, the e-Campus Foundation:

"proposes itself as a promoter and facilitator of effective relations between systems, people, institutions and social groups, making practicable methodologies, advanced knowledge tested in the field and consolidated in practice, didactic creativity and evaluative innovation available to all, with the aim of encouraging the creation of intellectual capital, both personal and collective, which is quantitatively and qualitatively measurable".

e-Campus University is trying to conquer its place within the academic segment with a distinctive educational offer that intends to respond to some of the weaknesses of the traditional university system that can be traced to two main factors:

"qualitative (lack of attractiveness of the professional profiles produced by the university to the world of work) and functional (sometimes weak response to emerging needs for new skills and professional profiles)"¹⁰

With this in mind, the educational offer has sought to distinguish itself by proposing "degree courses that are completely innovative or in any case closely related to meeting the particular needs of the economic, social and productive fabric of the territory and the country". [...] To this end, a number of academic courses have been taken into consideration that respond to these needs, seeking to interpret the traditional engineering, legal, economic, psychological and literary degree classes in the light of the challenges posed by globalisation, innovation, digitalisation and the environmental crisis, which pose new needs and completely new problems, opening up scenarios to be explored.

Starting with the main reference documents in determining the University quality policies¹¹ [3] e-Campus describes the vision, mission and objectives:

Vision

e-Campus aims to be a leading university for academic excellence in the field of digital services; it guarantees high-quality education at all levels: *support for the research activities of the teaching staff and attention to the needs in the target areas.*

Mission

To promote cultural and scientific progress through an extensive network of branch campuses that are scattered throughout the country, e-Campus guarantees many students who do not have any other university nearby, the concrete possibility of accessing university education without incurring great costs.

¹⁰ The reasons for a new university. e-campus website

<https://www.uniecampus.it/ateneo/le-ragioni-di-una-nuova-universita/index.html> (Access: 01.06.21).

¹¹ Regulations and reference documents referred to in the official document

Law 240/2010; Legislative decree 19/2012 e D. M. 987/2016; ANVUR, "Accreditamento periodico delle sedi delle università e dei corsi di studio: linee guida", 2016 (http://www.anvur.org/index.php?option=com_content&view=article&id=26&Itemid=222&lang=it); Norme ESG 20152 (<http://www.enqa.eu/index.php/home/esg/>); Norme ISO 9001:2015[B6]

e-Campus University promotes an *experience of study* which leads students to graduate through the use of a new methodology and with a very *high level of personalisation of training services*. This level of personalisation is based on dedicated tutoring programmes. The University acts as a transparent and accountable institution that promotes *social innovation and economic development* through culture and academic excellence.

Objectives summarised by key words describing the actions to be carried out in order to achieve the objectives relating to the three institutional missions.

Didactics

1. Agreement between schools and the University: effective guidance, school-university collaboration, communication of training offers, definition of entry requirements, verification of entry requirements.
2. Training: increasing attractiveness, combating dispersion, improving teaching materials and courses, tutoring effectiveness, attention to the professional dimension, teaching flexibility, student-centred learning, continuous updating, teaching innovation, use of new technologies, constant tutoring, inclusion and lifelong learning.
3. Campus life: involvement, social and informal dimensions, participation in the life of the academic community.

Research

1. Supporting project ideas: national and international networking, fund raising, research services, focus on scientific productivity, promising research areas

Third mission

1. Technology transfer and dissemination

To sum up, e-Campus University aims to overcome the transmission model inspired by

“science for knowledge of the past and science for doing of yesterday, in order to promote science for action in which the scientist is part of the process of research and application, taking responsibility for it, with his worldview, his values, his skills and abilities (competences) and his sense of belonging to the environment in which he operates - today required by the complexity of the human-world system”.

e-Campus University faces the challenge of education through the lens of "complex thinking". The challenges of the new millennium in which the proposal is embedded require everyone to

“Learn from the ground up how to work, how to organise, how to live, how to relate to others. It is a model of university that goes beyond the traditional citadel of knowledge and is closer to the model of a laboratory of knowledge and competence, from which professionals do not come out filled with notions, but ‘well-made’ professionals”.

1.1 Statute

The Statute of e-Campus University was approved by resolution of the Board of Directors of the e-Campus Foundation on 21st September 2016.

The normative sources within which the University is established are referred to in Article 1, paragraph 4, as follows:

- the constitutional provisions and the provisions of the law on higher education concerning non-state universities authorised to award degrees with legal value;
- [the interministerial decree of 17th April 2003](#) on criteria and procedures for the accreditation of distance learning courses at state and non-state universities and university institutions authorised to award academic degrees pursuant to [art. 3 of decree no. 270 of 22nd October 2004](#);
- charter/statute;
- the regulations referred to in the statute and those concerning specific subjects, approved by the e-Campus University Board of Directors.

e-Campus University acknowledges the following [Code of Ethics](#), which determines the fundamental values of the University and of the academic community, promoting the recognition and respect of individual rights and the acceptance of duties and responsibilities towards the Institution. These values are:

- equality
- respect for the individual
- transparency and impartiality
- freedom of teaching and research
- the good name and reputation of the University.
- enhancement of merit

1.2 Organisation

As a small private university, its organisational chart is simple and well-defined, the research centres and faculties/departments report directly to the Technical Organisation Committee, and there are no formal intermediate coordination tools.[2] The organisational chart takes into account the recommendations for quality assurance introduced by ANVUR.

The organisational chart incorporates the recommendations for Quality Assurance introduced by ANVUR by providing for the CdS coordinators and the Quality Presidium.

The Joint Committee is not visible in the online organisation chart.

To guarantee its institutional mission, the Foundation establishes:

- the Learning Research Centre, whose function is to provide scientific and technical support for all education and training initiatives;
- the Scientific Council, which has the function of developing service policies, monitoring demand and assessing and improving supply;
- the documentation centre, which brings together national and international scientific (editorial and multimedia) production, produced by the Foundation itself, and a platform for connection with the most important databases on the subject.

e-Campus University was founded with the intention of offering and enhancing the distance learning model. The University has its own system that integrates the following three levels: didactic, technological and organisational. The Academic governance is structured as follows:

- President of e-Campus University
- Board of Directors;

- Rector;
- Academic Senate.

The teaching, research and service structures are divided into Faculties, which have scientific and teaching autonomy and are responsible for deciding on the organisation of teaching activities for the award of academic degrees. They are bodies of the faculties.

- The Faculty Council;
- Dean of the faculty;
- Course of study council;
- Course Directors (who correspond to the coordinators under the QA system set up by the National Agency).

Departments are organisational structures for promoting and coordinating research and supporting teaching activities:

- Director
- Department and Institute Council
- Research centres for the promotion and implementation of research activities aimed at specific objectives

2. Offer: products and services

With the first Institutive Decree of 2006, e-Campus online University is authorised to establish the following degree courses and specialised degree courses pursuant to art. 3 of Ministerial Decree 509/1999:

Faculty of Law

- Legal services for business (class 2)

Faculty of Economics

- Economics and business (class 28)
- Psycho-economics (class 28)
- Banking and insurance sciences (class 28)

Faculty of Engineering

- Civil engineering (class 8)
- Computer engineering (class 9)
- Industrial automation engineering (class 10)
- Power engineering (class 10)

Faculty of Arts

- Literature, music and performing arts (class 5)
- Design and fashion disciplines (class 23)

Faculty of Psychology

- Psychological sciences and techniques (class 34)

With the integration of the decree of 30.03.2009, the establishment of the following degree is also authorised

- Master's degree in Law (class LMG/01)

3. Technology

The University has adopted an LMS platform for its teaching services, which is accessible through a unique and secure identification procedure (Single Sign On) represented by an integrated system including:

- the University's Portal to use all services (online enrolment, Management, Student Secretarial Services, content delivery, residence bookings, LCMS, student reception, etc.);
- user management (students, tutors, teachers, secretarial staff), the production of content, and the monitoring of teaching activities;
- the EPPI procedure (Editor for the Design and Production of Courses) for the management of teaching activities and evaluation processes;
- the GPSP procedure (Personal Study Plan Manager), through which tutors can plan and monitor the study path of each member;
- the ESSE3 system of Kion/CINECA, for the IT management of educational secretarial activities, integrated with Moodle (version 1.9.x) to ensure the measurement of the "frequency" and the recording by SCORM track;
- the use of the e-Portfolio
- the integrated service for E-learning L2L, provided by CINECA

All IT services are outsourced.

The online learning environment is characterised by high modularity and flexibility of the use of the service, and is managed by a specific department. The platform, provided by the CINECA Consortium, meets all the technical standards defined by the law and accreditation systems, and is managed by an outsourced and completely dedicated e-learning service centre. The system

“uses parts of existing models, but is complemented, integrated and technically supported by the 'e-learning Service Centre'.”

The technological infrastructure is organised on the basis of a modular architecture, scalability, and optimization of the work. There are integrations of third-party software to improve the offer, for example:

- Articulate Storyline. This allows users to quickly produce specific Scorm Packages for online training;
- Teleskill for synchronous virtual classrooms.

The guarantee of access to people with disabilities is based on the adoption of the Web Accessibility Initiative (WAI) standards of the World Wide Web Consortium (W3C) recognized by the legislator.

Configured as a virtual campus, the University provides students with several apps aimed at encouraging interaction, use and participation:

- e-Campus club to encourage the start of cooperative and collaborative activities between colleagues of the same degree course but residing in different locations (including abroad). And also geolocation to give life to relationships in presence;
- e-campus web radio to be updated on news and events of the University;
- e-campus interactive to promote interactive teaching and practice timed support on questionnaires similar to the written exam;

- e-campus workApp dedicated to placement;

4. Processes

4.1 Regulations

All the regulations governing the University's activities and documents are available on the official website in the banner at the bottom of the page, which remains fixed regardless of navigation. This allows users to easily consult the page in accordance with the principle of transparency.

Among the essential documents, which derive from the Statute, there are:

- The General Regulations of the University, which clarify bodies, structures, tasks and responsibilities at general level; ([General Regulation of the University](#)).
- [Finance and Accountability Regulation](#) setting out: general principles; forecasting, management and reporting systems; contractual activities; organisation and operation; monitoring and evaluation system; and final and transitional provisions.
- The [Teaching Regulations](#) which include: the [University Teaching Regulations](#); the [University Regulations for the recognition of university credits](#); the [Regulations for the final degree examination](#); [General Regulations for University Masters Courses](#) and the Teaching Regulations for study courses.
- [The Teacher Regulations](#) defining: [the public selection of researchers](#); [the procedures for calling up professors of the first and second rank](#); [the calling up and renewal of contractual professors](#); [the supplementary regulations for the contractual relationship of researchers in force since 14.11.2016](#); [the regulations governing compatibility/incompatibility and the regulations governing the working hours of professors and researchers](#); [the activities of the professor in charge of supplementary teaching functions \(disciplinary tutor\)](#); [salary increases](#) and [subject matter experts](#)
- The [Regulations on BODIES and STRUCTURES](#) that, with regard to the national QA system, refer to the [Regulations of the University Evaluation Board](#), of the [Quality Presidium](#) and of [the Joint Teachers-Students Committee](#)
- The [Research regulations](#) defining procedures for the awards [of research grants](#) and [spin- off Institution](#); the regulations of three research centres: the [Centre for Studies and Research on Legal Policy and the Production and Services System](#); [the Centre for Studies and Research on Energy and the Environment](#); the [European Centre for Studies and Research on Enterprise](#) and [the Centre for Research on Learning and the Right to Education](#) (CRA).

CRA, which is of interest for the purposes of this work, is divided into three sections, each with its own specific objective:

"Section a: Learning at the heart of the person: human capital. Basic and applied research on the cognitive variables involved in human learning.

Section b: Learning at the heart of the enterprise: learning organisation. Basic and applied research on learning processes in organisations.

Section c: Learning at the heart of society: cognitive society. Socio-economic observatory on education, training, work".

- the student section provides [the STUDENT Regulations](#); [the Regulations for the conduct of proficiency examinations](#); [the Election Regulations for the election of student representatives to the Joint Teachers' and Students' Committees and to the Review Groups](#); [the Regulations for MASTER examinations, PERF. courses, TRAINING COURSES AND 24 CFU TRAINING COURSES](#) and the [REGULATION ON THE PROHIBITION OF SMOKING ON THE premises of eCampus online University](#)

The [Service Charter](#) completes the framework of the relationship and reciprocal commitments between the University and its users, explaining, among other things: services and technological standards; methods of providing services and teaching methods; teaching materials and design of courses, evaluation of profit exams and teaching services; services for students with disabilities and/or DSA.

4.2 QA guidelines

The [University's Quality Assurance system](#) is fully in line with the national framework determined by ANVUR

System AQA e-Campus

The University has already faced the periodic Accreditation visit in 2016, following which it has received a conditional accreditation for 24 months in 2017, which turned to be satisfactory with the 2020 verification. Among the points of attention reported by the external evaluation commission is the difficulty in involving students in the construction of internal quality processes.

From the whole documentary analysis, and from the reading of the accreditation results, it seems possible to state that in its first ten years of activity, e-Campus University has been mainly oriented to the training of adults, then starting a new season aimed at redrawing the map of development and academic positioning in terms of research and targets.

With regard to the first point, three interdisciplinary research centres and two PhDs in Medium and Mediality and Applied Sciences to well-being and sustainability have been established with the aim of outlining a distinctive field of research of a university that aims to be a key actor in social transformation. With regard to the second point, the penetration of the training offer towards increasingly young targets and beyond national borders has been defined.

4.3 Strategic Plan

The [2019-2021 Strategic Plan](#) highlights the objectives of the online University. It highlights in a particular way:

- the importance of the relationship with the territory through its numerous physical and scattered locations;
- the flexibility of integrated distance learning that is combined with the personalization and assistance of tutors online and on the territory;
- the idea of "Widespread University" usable in every place and at any time through the distance-presence mix on the territory;
- the University Information System that integrates cognitive, personal, logistical and administrative perspectives.

The enhancement and integration with the territory, as well as the ability to read innovation and emerging needs is guaranteed by the establishment of permanent Steering Committees to support the CdS.

After a timely examination of the state of the art with respect to Governance, teaching, research, Third Mission and internationalisation, the strategic plan details an analysis perspective according to the SWOT model that ends for each area, with the identification of improvement objectives and measurement indicators.

The examination of this document does not present any specific problems with the technological infrastructure adopted. However, some critical issues related to the very nature of distance learning can be identified, briefly summarised as follows:

- prejudices against on-line training that it is necessary to counter with a punctual and widespread incoming guidance activity;
- specificity of the target, generally coming from other unsatisfactory university courses;
- peculiarities of online training that requires continuous specific training of incoming and in-service teachers and tutors.

5. Academic bodies: main results

The in-depth interviews with the academic bodies carried out in March 2021 involved¹²:

- e-Campus Rector
- e-Campus General Director
- e-Campus Information System Manager

Our analysis concerns in particular the seven dimensions of the Digital Maturity Framework in HE (Đurek, Begičević Ređep, Kadoić, 2019), addressed in three specific macro areas: Cultural, Organizational, and Educational area.

The Cultural area expresses the organizational vision and mission, the communication approach, the people's way of engagement in university activities, and finally the innovation approach of the organization, with a specific focus on digital technologies. The Organizational area regards in particular all the aspects related to Leadership, Planning and Management, Quality Assurance and ICT resources and infrastructures. The Educational area refers to Teaching and Learning activities, Research and Third Mission (knowledge and technology transfer and service to society).

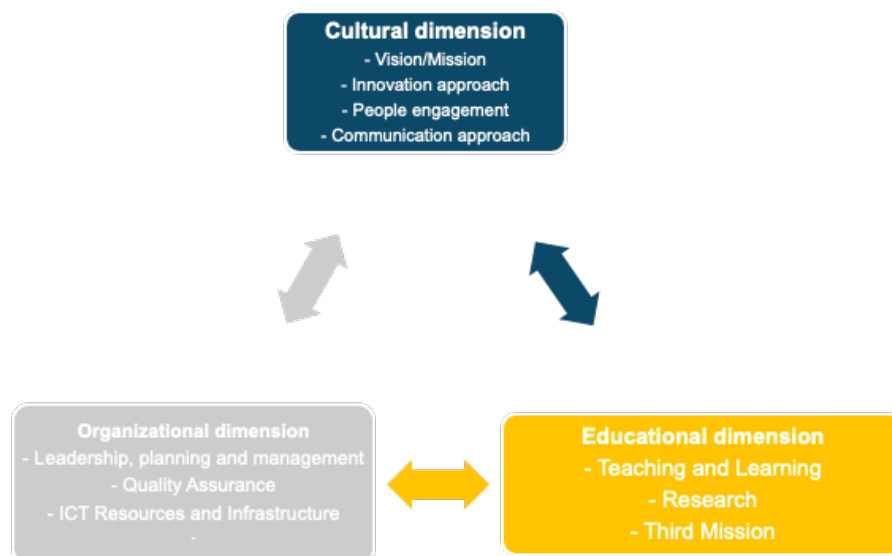


Figure 2: Digital Maturity Framework Areas

5.1 e-Campus Culture: a quality and “diffusive” learning experience

e-Campus aims to become a leading university in online academic excellence by guaranteeing quality training at all levels, supporting research activities of the teaching staff and paying attention to the needs of reference territories. The mission of the university is to:

- promote cultural and scientific progress throughout the country, reducing costs for students;
- promote a transformative study experience using new methodologies and with a very high level of personalisation of training services;

¹² The interviews will be reported in the text anonymously, respecting the privacy of the interviewees

- promote social innovation and economic development thanks to culture and academic excellence.

The distinctive training offer of e-Campus aims to respond to some **known weaknesses of the traditional university system** which can be traced back to two main types of factors:

- a qualitative one (low attractiveness of the professional profiles produced by the university in the labour market);
- a functional one (a weak response to the emerging needs of new skills and new professional profiles)

In this regard, among the main objectives of the e-Campus governance there are:

- interpreting and responding in a **new way to the demand for training of young people and adults**;
- offering a **holistic cultural proposal** capable of training people and not only professionals, through the training of "skills of technical-scientific content, but also of relational, value, managerial, cultural, ethical content"

"[careers and professions] are no longer as fixed and standardized as they once thought, it is not that there are ONLY the professions anymore, there are many specializations and many specialties that can then be acquired, therefore also the theme of updating it is always, it is always present..."

The **culture of quality and accreditation** emerges as a central element, as a driver of governance choices at all levels: from the didactic to the organizational level. It also depends on the system of accreditation of the online university in Italy, providing the main indications and monitoring parameters on which the training offer, curricula and organizational and evaluation procedures are built. ANVUR guidelines relating to the quality standards of online universities provide the model within which the organization moves and the style relating to teaching-learning.

"Teachers must be able to work in a certain way, however, in accordance with ANVUR guidelines. Coordinators must be able to check that teachers have done what they were asked!"



Figure 3: Quality culture

In addition, it is essential to pay attention to the students and their needs to obtain a degree without leaving their own territory and with a low cost, for a **diffusive learning experience**, assuming also a **social and inclusive function**.

"We enter the students' houses, which means not only that students participate in university activities, but that the family indirectly listens [...] in this way we have a great advantage! Which is to raise the culture!"

"Now that you can take the exams online, before they went and did maybe a few hundred, one hundred and fifty kilometres to go to the exam centre, so ... and then, in any case, one goes to the traditional ones and often you have to go to university which means spending 1000, 1500 Euro because if you don't want to put a boy under a bridge [...] this makes the internalization process, even more, osmotic and probably also allows you to avoid or minimize travel at least in Europe to stay in our, in our ... of course, the human component of the relationship between people remains, but not so much with respect to the teacher, as with respect to the habitat!"

5.2 e-Campus: a complex university

The need to manage such a large number of students located throughout the national territory has promoted the development of a **functional organization** (Mintzberg 1981) in which the following prevail:

- Greater complexity of the environment, but relative stability;
- Presence of management bodies specialized by function (teachers, study course tutors, teaching tutors, technical tutors; study course coordinators, information systems technicians ...);
- Formalization of the structure to cope with the complexity of the articulation and to resolve the issues of competence between the various organizational units;
- Clear distinction between the academic senate and the general management
- **A strategic leadership – performance oriented**

Great attention is paid to the **monitoring and control procedures of the processes** which affect all the actors involved: organizational staff, teachers, tutors and students. In this context digital technologies are the driver of the monitoring and evaluation actions, providing reliable data to the Quality Presidium:

It is much more monitorable ... that's all. Standards are established, services are surveyed, statistics are taken, measured...why else how do you measure something? It is difficult to measure. If we talk about it, it's fine, brainstorming is fine, then if you want to improve you have to draw a line, you must have data, and in a systematic way it is much easier than doing it by project. That is what I said before, in traditional universities this thing is done, but for PROJECT, but because there is a professor, or two professors or a team who does it one-off to better understand his work and to tell the others as YOU COULD do!"

In fact, a constant commitment in the development of digital technologies and online environment carries out to facilitate contact between teachers, students, tutors and staff through an integrated desk from which the teacher and the student can access all the functions:

- booking and interview room, messaging;
- online contact with the didactic secretariat;
- VOIP switchboard available to students for telephone contact with the teacher respecting the privacy of students and teachers;
- apps for access to lessons;

- access to the simulation of written tests, with relative feedback.

In the future, the perspective is to move more and more towards **adaptive learning**, creating the best learning experience for the learner.

Online universities such as e-Campus, in the field of Research and Third mission are further behind than didactics and this aspect also comes to light in the interviews with academic bodies:

"In my opinion, digitization is a tool to be able to objectify research activities and make them shareable as much as possible by those who really want to know what the research results are"

"So we are not in a hurry to do research as a university but we need to do it, do it well to respond to actual needs, not to show that we have done it! And the same thing for the third mission which is in a consolidation and development phase but runs fast, e-Campus has strong roots with the environment in which it goes to express its work"

5.3 Towards an adaptive learning

e-Campus opts for a product-oriented approach based on the individualization and personalization of teaching activity.

Among the didactic models of reference, we can recognize the following: **the ID Model (Instructional Design Model), Mastery Learning model, Pedagogy by objectives, CAI (Computer assisted Instruction)**

Attention is placed on the learning outcomes as the result of a specific teaching action, with a special focus on the issues described below:

- learning is seen as a predicted and controllable phenomenon;
- objective of the model: to achieve the expected result;
- forecasting of results;
- planning by objectives;
- skills of the teacher and tutors: ability to forecast and control interventions - process monitoring;
- evaluation to verify the results achieved once the process is complete.

The figure of the tutor is central in the teaching - learning process. Tutors can be: study course tutors, disciplinary tutors, technical tutors (on line tutors).

The tutor of the courses of study is a logistic tutor: he/she takes care of determining the prerequisites, evaluating the students' level of schooling: *in such a way as to give students an initial orientation at the level of rescheduling of timing, first this teaching, then this other teaching; evaluate if there is the need to make additions, rather than the entire teaching.*

... the course tutor is the most important educational figure, and not only perhaps, as regards the university; in my opinion he is the real fulcrum of everything.

"in our universities the human relationship is very good because of the tutor system is the one that solves the direct issues is very effective, then the student when problems can and should speak to your mentor on two sites, one procedural because often our students are not really young or there is a bit of laziness or something else, so they are guided"

The disciplinary tutor supports the teacher in all the various activities that the teacher has to do, then supports him/her in interviews with the students, in the preparation of the exam tests, in the correction of the final papers.

Finally, the **technical tutor** is a technical help desk who intervenes when the students have technical problems with the platform: *"the technical tutor is invoked when the technical things are not within the reach of the tutor of the course of study, therefore the student has, in his reserved area, a button, where we can say he can invoke the help of the technical tutor ... I cannot download "; "I can't see "; "this doesn't work for me, "I haven't done this update", "I can't do this thing".*

5.4 Future challenges and areas of development

The 2019-2021 Strategic Plan illustrates the ambitions of e-Campus, highlighting in particular:

- the importance of the relationship with the territory through its numerous physical and disseminated locations;
- the flexibility of integrated distance learning which is combined with personalization and the assistance of online and local tutors;
- the idea of a "diffused university" that can be used in every place and at every moment through the mix distance-presence on the territory;
- the University Information System which integrates cognitive, personal, logistic and administrative perspectives.

During the interviews some possible improvements emerged:

- development of a punctual and widespread inbound orientation/vocational activity to counter the widespread prejudice on online training;
- attention to the specificity of the target, generally coming from other unsatisfactory university courses;
- specificity of online training which requires continuous specific training of incoming and in-service teachers and tutors.

6. Focus groups: main results

Three focus groups were carried out during the month of April 2021. They were held online, using Google Meet videoconferencing tool. Each of them lasted for approximately two hours and a half; they were all audio-recorded and transcribed verbatim.

The focus groups involved:

- 6 Online teachers (1 for each of the six Faculties of e-Campus, which are Economy, Law, Engineering, Psychology and Literature);
- 6 Disciplinary tutors (1 for each of the six Faculties of e-Campus);
- 6 Coordinators of online tutors (1 for each of the six Faculties of e-Campus).

6.1 Participants' role

To better understand the specific point of view of all the participants involved in the focus groups, it is useful to explain a little bit further the tutoring model adopted by e-Campus already mentioned in paragraph 5.3. In fact, Disciplinary tutors and Coordinators of online tutors have different roles and functions in e-Campus.

Disciplinary tutors, who are content experts and trained in the technical and communication aspects of online teaching, have the main task of supporting the teacher in teaching activities (i.e., collaborating with the teachers in the preparation of teaching materials).

Coordinators of online tutors, separated by Faculty, have the objective of organising and strengthening the relationship between online teachers and online tutors.

Finally, online tutors (or technical tutors) aim to support student motivation throughout the educational pathway, adequately modulate the course of study to the characteristics of each student and promote their active role. In addition, they provide students with ongoing technical support in the use of the Virtual Learning Environment.

6.2 Analysis Framework

The analysis, according to the general framework described and the tools provided in the report [IO1.A1 Digital Technologies in HE: from the European vision to the university governance. Theoretical framework, European framework, Template and tools for national Case Studies](#), concerned in particular:

- Digital Innovation Idea (What is participants' idea of digital innovation in Higher Education? What is digital innovation in their university context? If and how have digital technologies modified their way of working and interacting with each other?)
- Organisational Dimension
- Teaching practices and digital technologies
- Professional development
- Best practices

6.3 Digital Innovation Idea

All three groups, reflecting on the nature of digital innovation, highlighted **the contradictions that characterise it** at present. Digital innovation is often implemented at the cost of an **increase in the complexity of processes**, for instance when it results in the development of several non-interoperable platforms.

"In digital innovation, the apparent simplification often hides a significant increase in the complexity of processes." (Focus group 1. Online teachers)

However, participants also recognise that **digital technologies are an invaluable resource for education**, especially in times of crises, such as the one that universities are facing during the Covid-19 pandemic.

“In our university all activities are mediated by technology, and even more so in the recent period of crisis, it has been evident how digital innovation is a necessity and a resource. Thanks to our university’s ability to innovate, teaching activities have never stopped and students have even been able to take even written exams remotely, without any delays.” (Focus group 2. Disciplinary tutors)

Moreover, digital innovation has been acknowledged as a powerful resource to provide students’ with a more flexible (in terms of time and space) and inclusive way to access higher education, and as a driving force to enable the shift toward more learner-centred learning processes, integrated with individualised support and guidance.

“The digital innovation that I have experienced, and which I am experiencing, is that digital tools provide easier access to study material and activities that the student should normally do; instead of going to the secretariat to register, instead of going to the classroom to study, the student can do the same activities at home, or in the park.” (Focus group 3. Coordinators of online tutors)

“Since everything is on the platform, which the student can access at any time, it is the student who organizes and punctuates his time in relation to his studies.” (Focus group 3. Coordinators of online tutors)

6.4 Organisational Dimension

Participants were asked to reflect on how the university as a system is transformed under the pressure of digital innovation in terms of organisation, internal processes, workflows and communication, at different levels. The picture that emerged from their words is that of an ongoing transition for which a common vision and shared rules are still lacking, also at the social level.

“How can I ask for clarification if I have an administrative problem? Who should I ask? How can I ask all these questions without being pedantic and without disrupting the work of others?” (Focus group 1. Online teachers)

“It is as if there is nothing to regulate what happens digitally. For instance, if I go to the reception of a professor, I know that I have to knock before entering, say “good morning” and in general, I have social rules that I have to respect. Online is does not exist. I mean, if I have a reception online and the people who are connected don’t turn on their webcams, to me it’s a sign of rudeness. But, in fact, there is no rule that makes it clear to students that they should keep their cameras on as a sign of respect.” (Focus group 2. Disciplinary Tutors)

Unfortunately, this may result in an additional level of stress and uncertainty for those involved.

“Sometimes, the introduction of a digital innovation involves the reconstruction of a process. And this generates a load of stress for us and our colleagues.” (Focus group 3. Coordinators of online tutors)

It is also apparent that, with the proliferation of communication channels available nowadays, it is not always easy, especially for the youngest, to choose the appropriate channel for a specific communication or even the right communicative register.

“The other issue I encounter is the non-distinction of the means they use. That is, they write emails as if they were chats and they write in chats as if they were talking. That is, they lack this distinction of the correct use of the various means of communication and of the technologies they are using.” (Focus group 2. Disciplinary Tutors)

Finally, several participants reported that the introduction of digital technologies affected their work-life balance in many ways. In fact, if on the one hand technologies make it possible and even easy to work from home and to collaborate with colleagues remotely, enabling them to reclaim the time they usually spend commuting to work, on the other hand, it blurs the boundaries between working time and personal time.

“We are, practically, always connected, actually. Because it's just our mindset. So, even if we are not working, we always have the alerts active on our mobile phone because we always expect to receive some kind of communication. I don't know about you, but I'm in a constant state of alert, and with the fear that I might forget something. So, I always have alerts on and they come to you at midnight, they come to you everywhere.” (Focus group 2. Disciplinary Tutors)

6.5 Teaching practices and digital technologies

When prompted to reflect on if and how digital resources and technologies changed/modified their way of working/teaching/designing learning paths and their relationship with students and colleagues, online teachers pointed out that online teaching requires the adoption of different methodologies. Therefore it is crucial for online teachers to acquire specific skills, to be able to effectively teach online. Moreover, they feel that the amount of work required to prepare quality online lessons is often underestimated.

“People often do not realise how much more complex it is to prepare a lesson for an online course than for a face-to-face course. In online training, you can't improvise anything, you can't go into a classroom and adapt the material to the class in front of you. Everything has to be carefully designed beforehand and as clear and self-consistent as possible. Also the time that is required to learn how to use all the tools necessary to prepare an online lesson is often not taken into account.” (Focus group 1. Online teachers)

Even though, on paper, the introductions of digital technologies would allow for easier and wider participation of students, both teachers and disciplinary tutors report having difficulties in fostering students' engagement, and the limitation of replicating the traditional face-to-face lesson format in the online classroom.

“In synchronous virtual classrooms, students are a bit reluctant to speak up, as far as I am concerned. I always propose it to them but, at most, they write in the chat.” (Focus group 2. Disciplinary Tutors)

“Teachers usually set up the lesson as if it were a frontal lesson, especially for subjects like history and literature. So, perhaps it is more difficult to keep the students' interest and attention, because maintaining interest through a screen becomes much more complicated.” (Focus group 2. Disciplinary tutors)

6.6 Professional development

During this part of the focus group discussion, participants were asked to think about the most important skills needed to effectively perform their job, apart from knowledge and competencies specifically related to disciplines. Among the three groups, teachers are the ones that mostly highlighted the importance of communication skills and relational skills.

“Digital communication processes are completely different from analogue ones and require specific skills. So do ways of stimulating students to participate and interact in a virtual lesson. Therefore, competences are needed in terms of ways and tools to promote online engagement and to manage distance communication.” (Focus group 1. Online teachers)

“When we are placed in particular teaching contexts, such as online ones, we must obviously also be equipped with the relational and empathic skills to understand the needs of the student, to detect his or her training needs, in order to adapt our proposal to the characteristics of the student in front of us.” (Focus group 1. Online teachers)

Other transversal skills, such as problem solving and team work, are also mentioned as critical by the group of Coordinators of online tutors.

“Teamwork is a very important thing in my faculty, because it's important that everyone makes their own contribution and offers their own vision of the problem. In my opinion, problem solving is based on this, on the fact that I can approach the problem in a certain way, but my colleague can approach it in a different way, and from this synergy, we can find a solution to the problem for everyone.” (Focus group 3. Coordinators of online tutors)

The skills most frequently mentioned by all participants to the focus groups are:

- Organisational skills (to be able to proficiently organise working tasks, achieving a good work-life balance).
- Technological/digital skills (especially the ability to master technological tools that are part of everyday working life).
- Continuous professional development (to stay constantly updated, and to be an active part of on the job collaborative learning processes).
- Communication and interpersonal skills (to make use of digital technologies in a responsible way, to communicate clearly and effectively in written form through the different digital channels, to reduce the distance between the different actors of communication, teachers, learners, co-workers, to show empathy and offer guidance in case of difficulties).

- Teaching skills (to master the proper teaching methodologies to adopt in a specific course, taking into account the subject, the learning objectives and the characteristics of learners, and to know which strategies and tools can be used to maximise the level of students' engagement and motivation).
- Flexibility, resilience and adaptability to change (to be able to adapt to the continuous changes that technologies impose on work processes and, more generally, to changes that can also occur due to external circumstances, as was the case in the Covid-19 emergency).

Regarding the way participants keep up to date and acquire and improve the skills they need to effectively perform their job, the most mentioned solutions were:

- training initiatives organised by the University, that all the three groups of participants highly appreciated;
- learning by doing;
- collaboration among peers.

The importance and the value of the training initiatives promoted by the University were highlighted by all participants.

“There are teacher training courses that are regularly provided by the university, especially for recruits. These courses enable each teacher to gradually acquire and consolidate their own digital skills.” (Focus group 1. Online teachers)

“The university offers training courses on topics such as online communication, both written and oral. Also on the use of the online learning environment and the tools it integrates. Training is seen as a key resource.” (Focus group 2. Disciplinary Tutors)

“As coordinators, we are trying to compensate for the challenges of digital transformation by providing training courses, because we have realised this need, and we have therefore implemented a large number of training and refresher courses for our tutors. We are also doing an online refresher course, so we are also dealing with the transition to digital training.” (Focus group 3. Coordinators of online tutors)

6.7 Strength and weakness, opportunity and threat in implementation of DT in HE

At the end of each focus group, a specific part of the discussion was focused on collecting impressions, reflections and suggestions related to digital innovation and the implementation of digital technologies in the context of higher education and on highlighting strengths, weaknesses, opportunities and challenges emerging from each participant's perspective and personal experience.

Table 1. Focus Groups' SWOT Analysis

<p>Strengths</p> <ul style="list-style-type: none"> - the possibility to easily collect data to measure, i.e. students' learning progress, their degree of maturity, of involvement, etc. - the ability to offer students immediate feedback on their learning progress (i.e. thanks to automated feedback provided by the digital learning environment) - lower barriers to communications between students, teachers and tutors (thanks to digital technologies, it is easier for students to reach out to teachers/tutors to clarify doubts and to receive guidance when needed) - the possibility of tailoring the learning pathway to the characteristics of each student 	<p>Weaknesses</p> <ul style="list-style-type: none"> - the lack of personal interactions, which translate into low quality of interaction - increase risk of cheating by students - "online education is often considered as a trivialised, simplified proposal, not at the same level as traditional didactics" - the need to find new and effective ways to engage and keep students motivated
<p>Opportunities</p> <ul style="list-style-type: none"> - "Dissemination of digital literacy, because all our students, since they enrolled in an online university, are forced into minimal digital literacy" - digital technologies make it possible to improve the level of inclusiveness of higher education, making access to higher education easier for categories of students (people with disabilities, workers, elderly people, etc.) who would not otherwise have been able to complete their studies - "Possibility of reaching the territory in a widespread manner to provide training" 	<p>Challenges</p> <ul style="list-style-type: none"> - "Become attractive not only for the type of students who could not have finished their studies in any other way" - Some students still have a low or insufficient level of digital literacy - Keeping alive the role of the university as a place for cultural debate and discussion and growth among all the players involved, even in the digital space - Effectively training teachers to enable them to take full advantage of the potential of digital technologies.

7. Students: main results

Introduction

The questionnaire was sent mainly to all the students of e-campus University. The number of total responses was 227. Some sections were explored related to the following topics:

Teaching and Learning Process:	10 Multiple choice questions (5 Level Likert scale)
Students' Experience	: 17 Multiple choice questions (5 Level Likert scale)
Students Learning Outcome	: 9 Multiple choice questions (5 Level Likert scale)
Profiling	: 9 Multiple choice questions
Customize Section	: 5 Multiple choice questions (5 Level Likert scale)
SWOT Analysis	: 4 Short open questions

The five-level Likert scale is coded as in Table 2 below.

Table 2: Likert Scale Codification

Modality	Code
Strongly Agree	5
Agree	4
Neutral or uncertain	3
Disagree	2
Strongly Disagree	1

7.1 Sample Profile

The total number of responses is 227 of which about 65% are female and about 3% do not want to declare their gender. The respondents are 26 or older and are attending a Bachelor's degree course. Among these, the distribution over the three years is quite balanced. The majority of the respondents are attending a course in the area of cognition, psychology, linguistics, philosophy and education. The majority of respondents (93%) are in progress with the training path.

All the results are summarised and presented in Tables 3-7 and Figures 4-8. For the analysis and the creation of charts Excel has been used.

Table 3: Gender of Students

Gender	No. of Students	% of Students
Female	147	64,76%
Male	74	32,60%
I do not want to declare	6	2,64%
Total	227	100 %

Figure 4: Pie Chart of Students' Gender

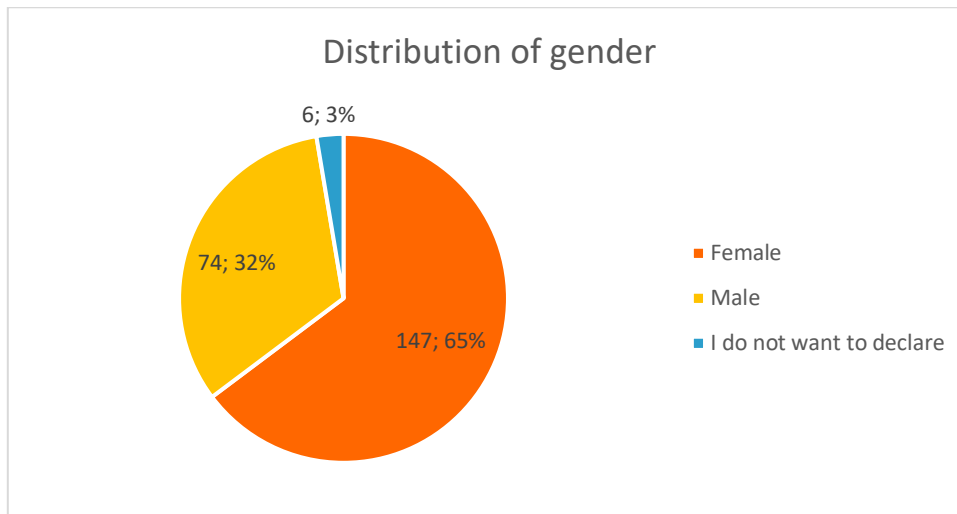


Table 4: Age of Students

Age	No. of Students	% of Students
17-19	8	4%
20-22	34	15%
23-25	30	13%
26 or more	155	68%
Total	227	100 %

Figure 5: Histogram of students' age

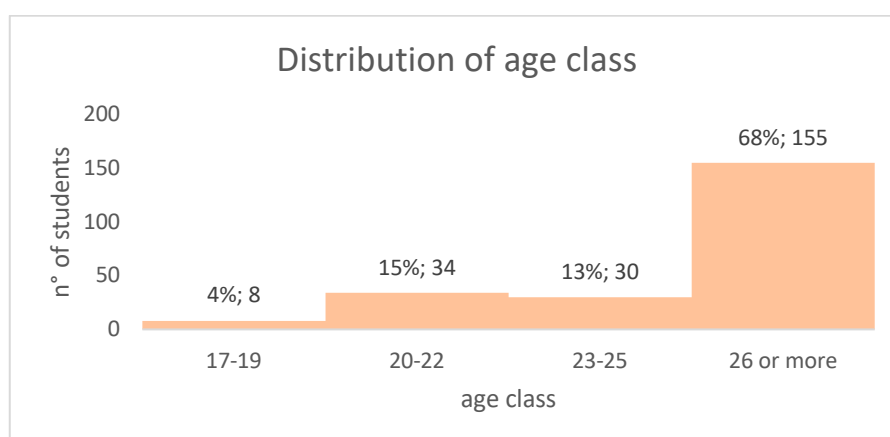


Figure 6: Pie Chart of students' school degree

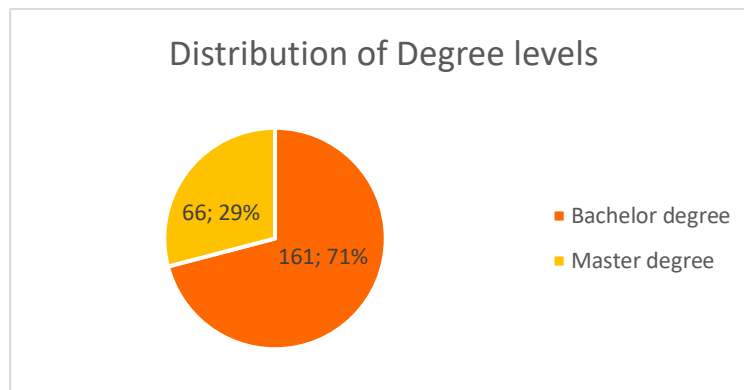


Figure 7: Field of educational studies (degree areas)

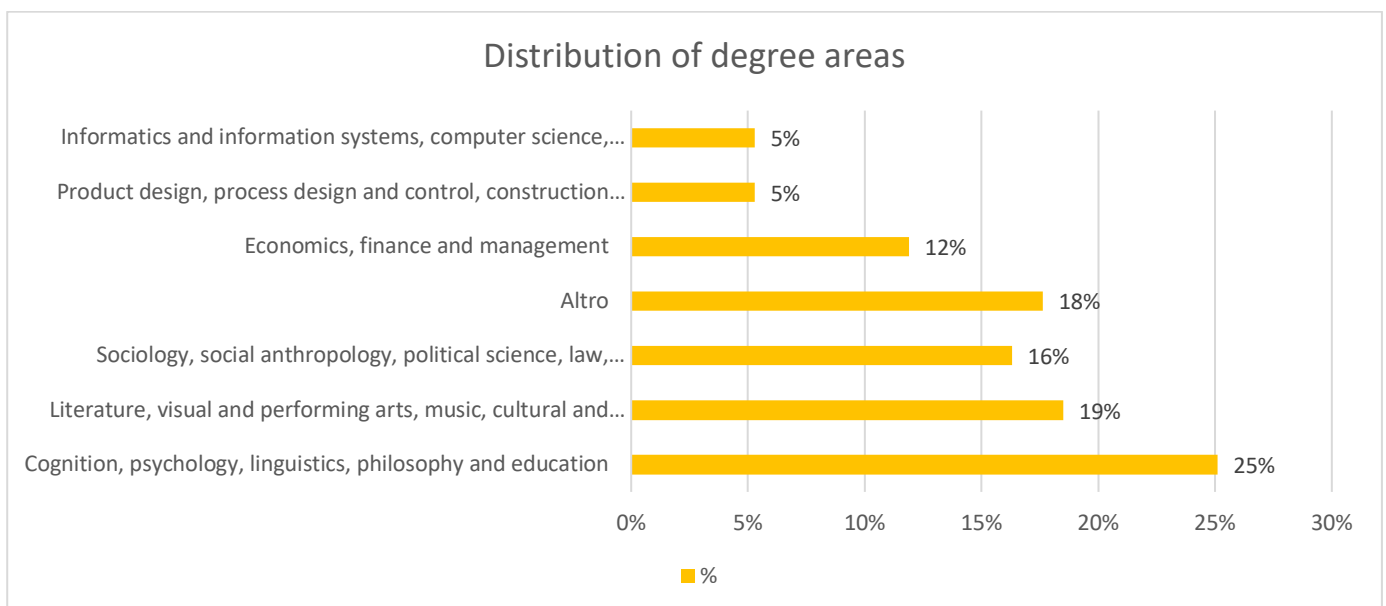


Table 5: ongoing degree course year

Year	% of Students
First year	30,40%
Second Year	26,87%
Third year	22,91%
Other	19,82%
Total	100%

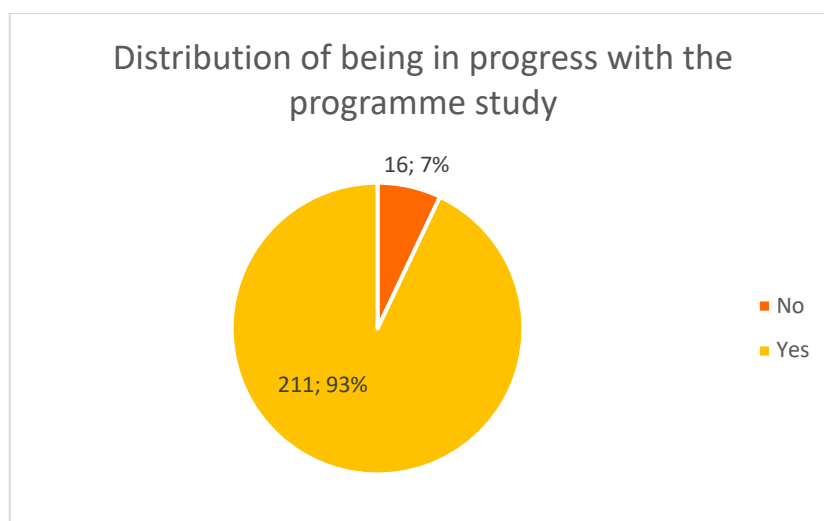
Table 6: year for Bachelor's degree students

Degree	% of Students
First year	29,19%
Second Year	29,81%
Third year	32,30%
Other	8,70%
Tot	100,00%

Table 7: Progress with exams

Progress with exams	no. of Students	% of Students
No	16	7,05%
Yes	211	92,95%
Total	227	100 %

Figure 8: Pie Chart of students' progress with the exams



7.2 Teaching and Learning Process

With regards to the Teaching and Learning Process, the questionnaire includes 10 questions. The results from each question are presented with the following codification:

To foster students' learning, in the classes, the teachers:

- TL_P_1: Use game elements or educational games.
- TL_P_2: Use visual or digital resources and tools.
- TL_P_3: Use conceptual maps.
- TL_P_4: Use class group activities.
- TL_P_5: Use case studies.
- TL_P_6: Use lab experiments and simulations.
- TL_P_7: Stimulate debating and peer assessment.
- TL_P_8: Invite guest speakers.
- TL_P_9: Assess students' prior knowledge to orient personalized learning.
- Assess the students' knowledge:
- TL_P_10: Students take innovative tests (quiz, game, playing role, speech, etc.) during the classes.

Frequency distribution is presented in Table 8 while barplot for each question is presented in Figures 9 and 10. Figure 11 depicts the boxplots of the questions and Table 9 presents their descriptive statistics. For the analysis and the creation of charts Excel was used.

Table 8: Frequency Distribution of Teaching Learning Process Questions

	TL_P_1		TL_P_2		TL_P_3		TL_P_4		TL_P_5	
Modality	n	%	n	%	n	%	n	%	n	%
Strongly disagree	15	6,61%	2	0,88%	5	2,20%	9	3,96%	3	1,32%
Disagree	22	9,69%	3	1,32%	7	3,08%	16	7,05%	10	4,41%
Neutral or uncertain	50	22,03%	20	8,81%	35	15,42%	55	24,23%	39	17,18%
Agree	101	44,49%	124	54,63%	102	44,93%	87	38,33%	116	51,10%
Strongly Agree	39	17,18%	78	34,36%	78	34,36%	60	26,43%	59	25,99%
Total	227	100%	227	100%	227	100%	227	100%	227	100%
	TL_P_6		TL_P_7		TL_P_8		TL_P_9		TL_P_10	
Modality	n	%	n	%	n	%	n	%	N	%
Strongly disagree	6	2,64%	7	3,08%	8	3,52%	10	4,41%	7	3,08%
Disagree	11	4,85%	17	7,49%	18	7,93%	20	8,81%	17	7,49%
Neutral or uncertain	31	13,66%	41	18,06%	59	25,99%	43	18,94%	32	14,10%
Agree	94	41,41%	105	46,26%	95	41,85%	99	43,61%	108	47,58%
Strongly Agree	85	37,44%	57	25,11%	47	20,70%	55	24,23%	63	27,75%
Total	227	100%	227	100%	227	100%	227	100%	227	100%

Looking deeper to the responses we observe that the responses covered all the spectrum of possible answers, as standard deviation is close to one, with the majority of students having a neutral to positive stance

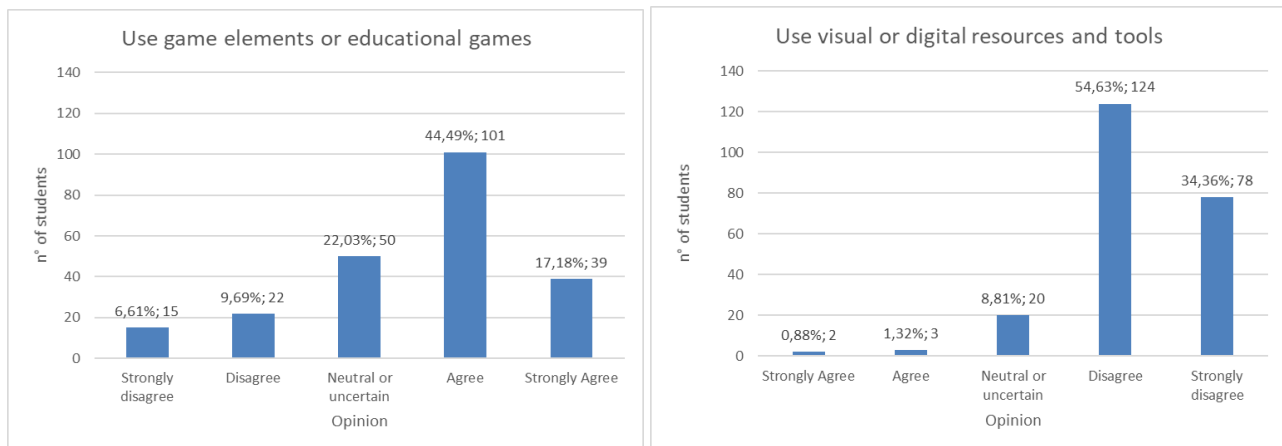
about teaching and learning process (negatively skewed distributions), as the average arithmetic mean of the questions is at least 3.56.

An overall look at distributions by boxplots also reveals that TL_P_4 (Use class group activities) and TL_P_7 (Simulating debating and peer assessment) are strongly spread out along all possible values and TL_P_1 (Use game elements or educational games), TL_P_8 (Invite guest speakers) and TL_P_9 (Assess students' prior knowledge to orient personalized learning) are the less asymmetric.

Table 9: Descriptive Statistics of Teaching Learning Process Items

	TL_P_1	TL_P_2	TL_P_3	TL_P_4	TL_P_5	TL_P_6	TL_P_7	TL_P_8	TL_P_9	TL_P_10
N	227,00	227,00	227,00	227,00	227,00	227,00	227,00	227,00	227,00	227,00
Missing	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Mean	3,56	4,20	4,06	3,76	3,96	4,06	3,83	3,68	3,74	3,89
St. Dev.	1,09	0,72	0,91	1,05	0,85	0,97	0,99	1,00	1,06	0,99
Min	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Q1	3,00	4,00	4,00	3,00	4,00	4,00	3,00	3,00	3,00	4,00
Median	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00
Q3	4,00	5,00	5,00	5,00	5,00	5,00	4,50	4,00	4,00	5,00
Max	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00

Figure 9: Barplot of Teaching Learning Process Questions 1 to 6



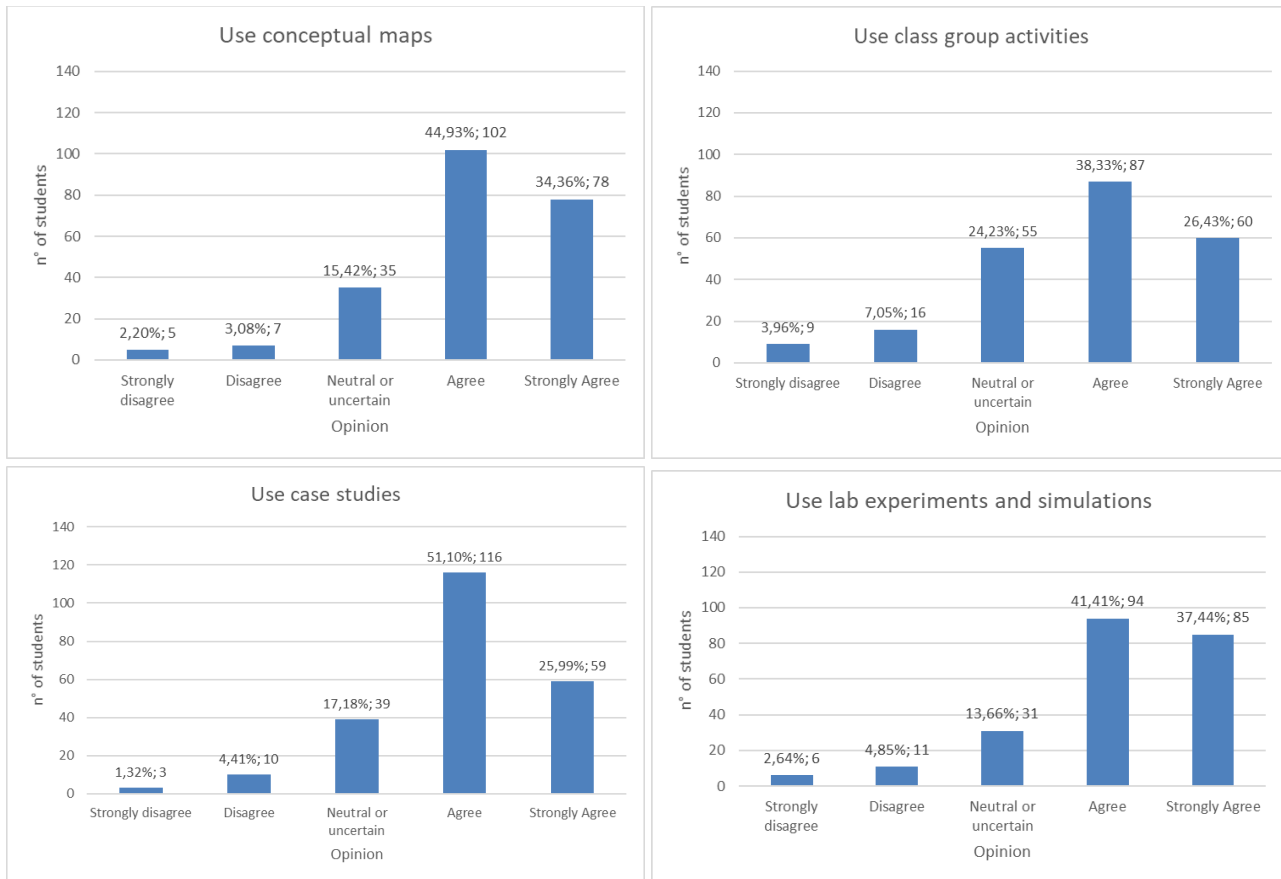
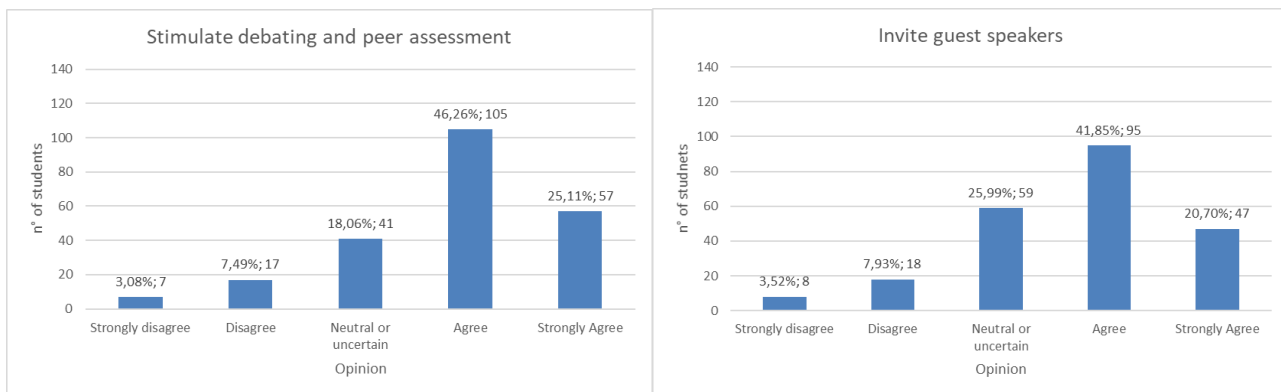


Figure 10: Barplot of Teaching Learning Process Questions 7 to 10



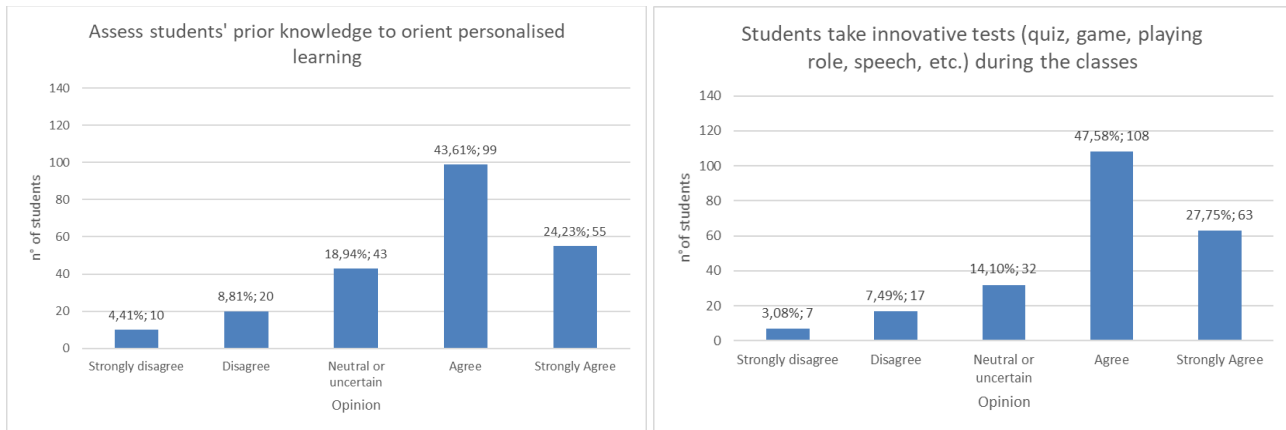
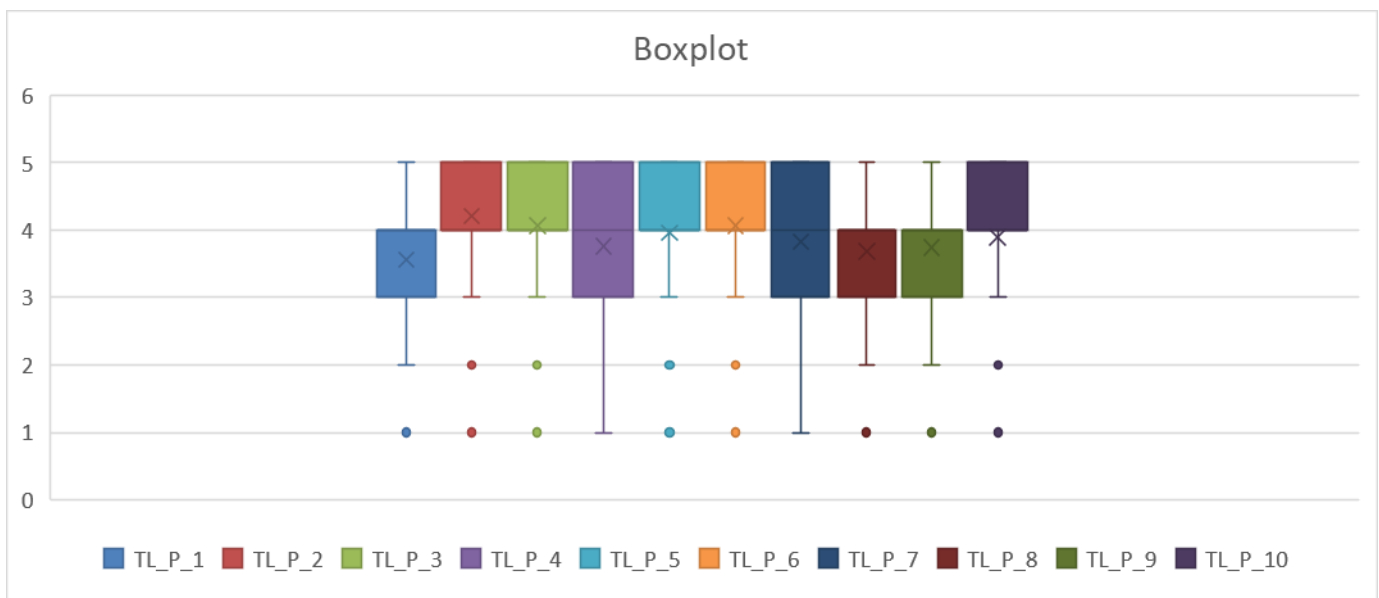


Figure 11: Boxplot of Items Teaching Learning Process



The following tables (10) present a cross data analysis. No significant variations concerning the teaching learning process were observed when separating data according to the ongoing degree course, which means that the students' opinion is weakly affected by the degree course they are attending.

Table 10: Data Separation According to the Degree course

Degree course / Use of Game Elements	Strongly Disagree	Agree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	7,45%	8,70%	23,60%	42,86%	17,39%	100,00%
Master's	4,55%	12,12%	18,18%	48,48%	16,67%	100,00%
Total	6,61%	9,69%	22,03%	44,49%	17,18%	100,00%

Degree course / Use of visual or digital resources and tools	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	0,62%	0,62%	9,94%	54,04%	34,78%	100,00%
Master's	1,52%	3,03%	6,06%	56,06%	33,33%	100,00%
Total	0,88%	1,32%	8,81%	54,63%	34,36%	100,00%

Degree course / Use of conceptual maps	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,86%	1,86%	14,29%	45,34%	36,65%	100,00%
Master's	3,03%	6,06%	18,18%	43,94%	28,79%	100,00%
Total	2,20%	3,08%	15,42%	44,93%	34,36%	100,00%

Degree course / Use of class group activities	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	3,73%	7,45%	23,60%	39,13%	26,09%	100,00%
Master's	4,55%	6,06%	25,76%	36,36%	27,27%	100,00%
Total	3,96%	7,05%	24,23%	38,33%	26,43%	100,00%

Degree course / Use of case studies	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,24%	3,73%	16,77%	50,31%	27,95%	100,00%
Master's	1,52%	6,06%	18,18%	53,03%	21,21%	100,00%
Total	1,32%	4,41%	17,18%	51,10%	25,99%	100,00%

Degree course / Use of lab experiments and simulations	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,86%	5,59%	14,29%	42,24%	36,02%	100,00%
Master's	4,55%	3,03%	12,12%	39,39%	40,91%	100,00%
Total	2,64%	4,85%	13,66%	41,41%	37,44%	100,00%

Degree course / Stimulate debating and peer assessment	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	2,48%	8,07%	19,25%	42,86%	27,33%	100,00%
Master's	4,55%	6,06%	15,15%	54,55%	19,70%	100,00%

Total	3,08%	7,49%	18,06%	46,26%	25,11%	100,00%
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Degree course / Invite guest speakers	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	3,73%	8,07%	26,09%	40,99%	21,12%	100,00%
Master's	3,03%	7,58%	25,76%	43,94%	19,70%	100,00%
Total	3,52%	7,93%	25,99%	41,85%	20,70%	100,00%

Degree course / Assess students' prior knowledge to orient personalised learning	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	4,35%	8,70%	18,01%	42,86%	26,09%	100,00%
Master's	4,55%	9,09%	21,21%	45,45%	19,70%	100,00%
Total	4,41%	8,81%	18,94%	43,61%	24,23%	100,00%

Degree course / Students take innovative tests (quiz, game, role-playing, speech, etc.) during the classes	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	3,11%	7,45%	14,91%	46,58%	27,95%	100,00%
Master's	3,03%	7,58%	12,12%	50,00%	27,27%	100,00%
Total	3,08%	7,49%	14,10%	47,58%	27,75%	100,00%

7.3. Students' experience

With regards to the students' experience, the questionnaire includes 17 questions. The results from each question are presented with the following codification:

Based on my experience, I believe that:

- SE_1: Students are at their ease to each other.
- SE_2: Students are respectful towards each other.
- SE_3: The location is functional to my needs of studying or staff contact.
- SE_4: The faculty organization/structure is clear to me.
- SE_5: Announcements from the administrative staff are clear.
- SE_6: The administrative staff is prompt to support students' needs.
- SE_7: The teaching staff is empathic.
- SE_8: The teaching staff provides the support that I need.
- SE_9: The teachers are engaged in the teaching process.

- SE_10: The teachers are digitally competent.
- SE_11: The teaching materials are not too difficult to understand.
- SE_12: The teaching materials are appealing.
- SE_13: The lessons are available to students on the internet.
- SE_14: The lessons catch my attention and stimulate my curiosity.
- SE_15: Technology and learning portals are effectively used.
- SE_16: The ICT Tools and platforms are intuitively used.
- SE_17: I'm overall satisfied with my choice to study at this University.

Frequency distribution is presented in Table 11 while plot for each question is presented in Figures 12 -13. Figure 14 depicts the box plots of the questions and Table 12 presents their descriptive statistics. For the analysis and the creation of charts Excel was used.

By looking at the results, we can assess that all categories of scores have been used and, again, distributions are skewed left, meaning that positive opinions have been more frequently used. This is particularly true for SE_13 (The lessons are available to students on the internet) and SE_17 (I'm overall satisfied with my choice to study at this University).

Table 18 shows the frequency distributions by the ongoing degree course.

Table 11: Frequency Distribution of Students' Experience Questions

	SE_1		SE_2		SE_3		SE_4		SE_5	
Modality	n	%	n	%	n	%	n	%	n	%
1	6	2,64%	2	0,88%	5	2,20%	4	1,76%	6	2,64%
2	8	3,52%	10	4,41%	9	3,96%	16	7,05%	17	7,49%
3	70	30,84%	74	32,60%	48	21,15%	48	21,15%	37	16,30%
4	123	54,19%	106	46,70%	123	54,19%	120	52,86%	114	50,22%
5	20	8,81%	35	15,42%	42	18,50%	39	17,18%	53	23,35%
Total	227	100%	227	100%	227	100%	227	100%	227	100%
	SE_6		SE_7		SE_8		SE_9		SE_10	
Modality	n	%	n	%	n	%	n	%	n	%
1	6	2,64%	4	1,76%	8	3,52%	4	1,76%	4	1,76%
2	13	5,73%	18	7,93%	11	4,85%	19	8,37%	15	6,61%
3	50	22,03%	75	33,04%	52	22,91%	56	24,67%	46	20,26%
4	99	43,61%	85	37,44%	113	49,78%	116	51,10%	123	54,19%
5	59	25,99%	45	19,82%	43	18,94%	32	14,10%	39	17,18%
Total	227	100%	227	100%	227	100%	227	100%	227	100%
	SE_11		SE_12		SE_13		SE_14		SE_15	
Modality	n	%	n	%	n	%	n	%	n	%
1	3	1,32%	5	2,20%	2	0,88%	2	0,88%	6	2,64%
2	16	7,05%	69	30,40%	4	1,76%	13	5,73%	12	5,29%

3	52	22,91%	98	43,17%	18	7,93%	51	22,47%	51	22,47%
4	109	48,02%	19	8,37%	96	42,29%	105	46,26%	107	47,14%
5	47	20,70%	36	15,86%	107	47,14%	56	24,67%	51	22,47%
Total	227	100%	227	100%	227	100%	227	100%	227	100%

	SE_16		SE_17	
Modality	n	%	n	%
1	3	1,32%	6	2,64%
2	12	5,29%	12	5,29%
3	49	21,59%	30	13,22%
4	116	51,10%	109	48,02%
5	47	20,70%	70	30,84%
Total	227	100%	227	100%

Table 12: Descriptive Statistics of Students' Experience Items

	SE_1	SE_2	SE_3	SE_4	SE_5	SE_6	SE_7	SE_8	SE_9
N	227,00	227,00	227,00	227,00	227,00	227,00	227,00	227,00	227,00
Missing	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Ar.Mean	3,63	3,71	3,83	3,77	3,84	3,85	3,66	3,76	3,67
St. Dev.	0,80	0,81	0,85	0,88	0,96	0,96	0,94	0,94	0,88
Min	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Q1	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00
Median	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00
Q3	4,00	4,00	4,00	4,00	4,00	5,00	4,00	4,00	4,00
Max	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00
	SE_10	SE_11	SE_12	SE_13	SE_14	SE_15	SE_16	SE_17	
N	227,00	227,00	227,00	227,00	227,00	227,00	227,00	227,00	
Missing	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	
Ar.Mean	3,78	3,80	3,62	4,33	3,88	3,81	3,85	3,99	
St. Dev.	0,87	0,89	0,93	0,77	0,88	0,93	0,86	0,95	
Min	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	
Q1	3,00	3,00	3,00	4,00	3,00	3,00	3,00	4,00	
Median	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	
Q3	4,00	4,00	4,00	5,00	4,00	4,00	4,00	5,00	
Max	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	

Figure 12: Barplot of Students' Experience Questions 1 to 8

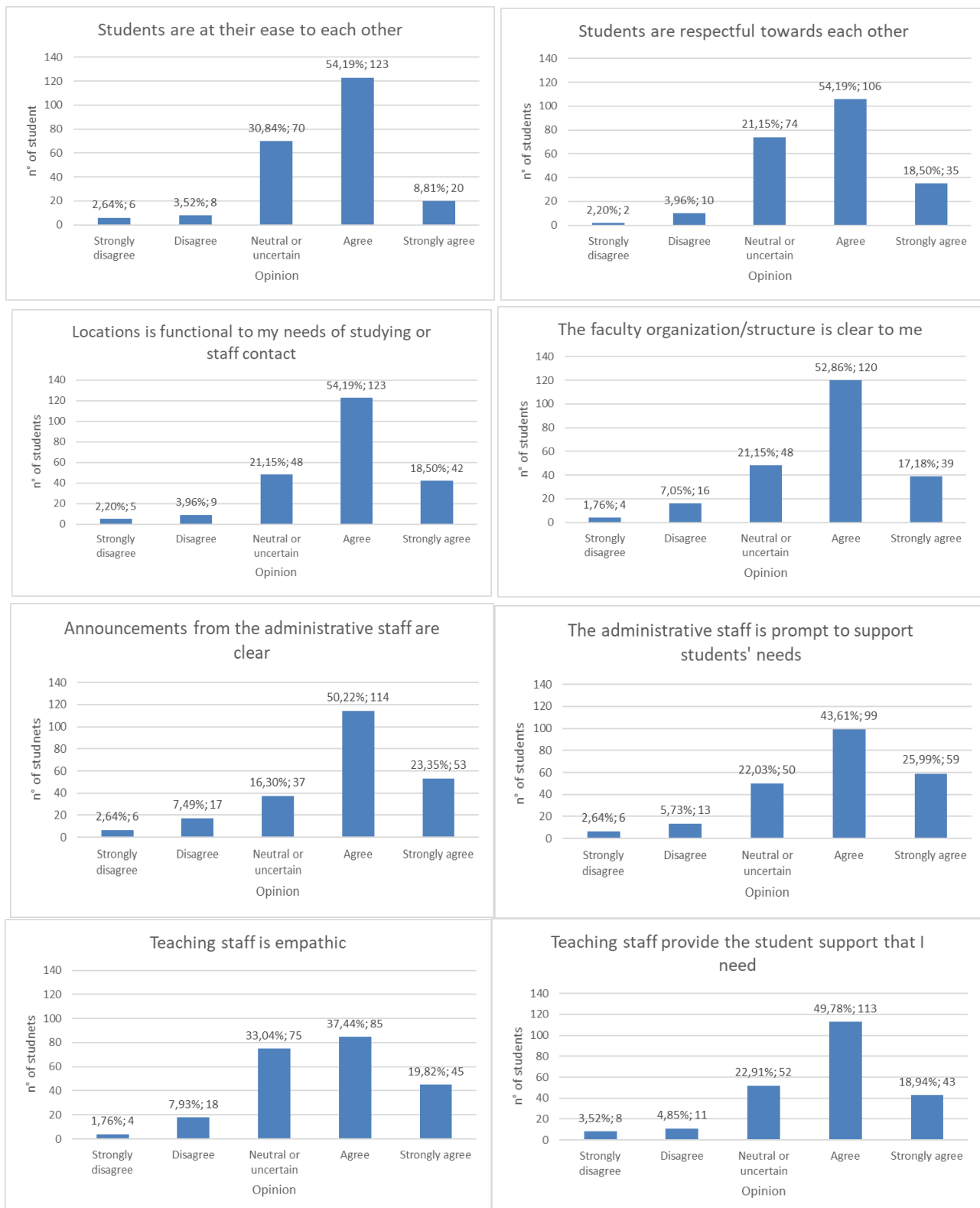
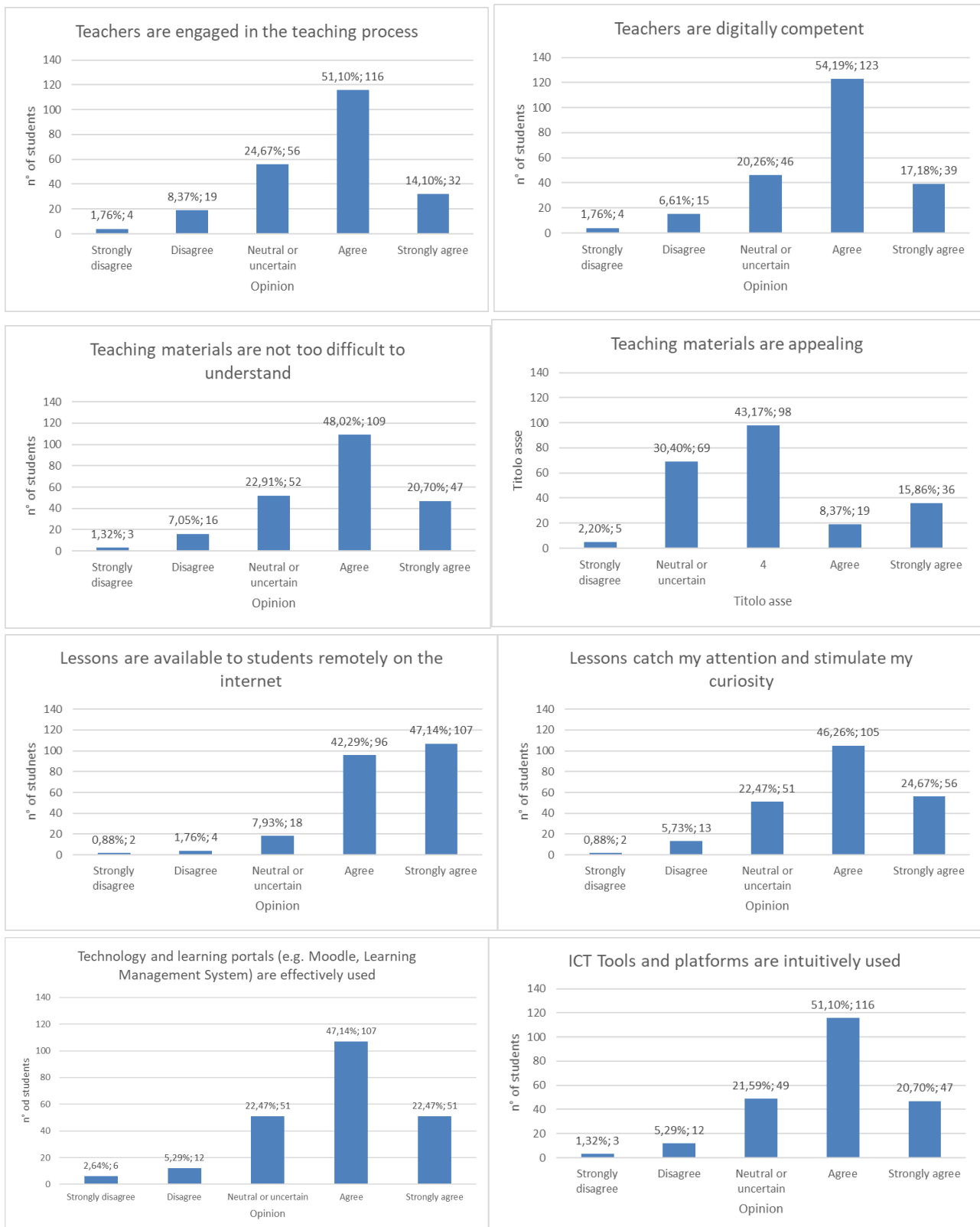


Figure 13: Barplot Students' Experience Questions 9 to 17



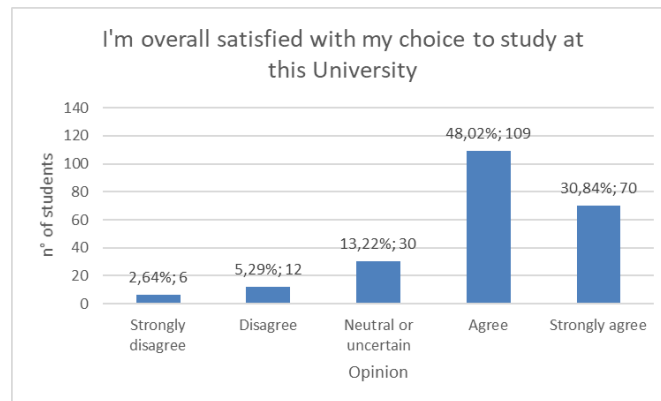


Figure 14: Boxplot of Students' Experience Items

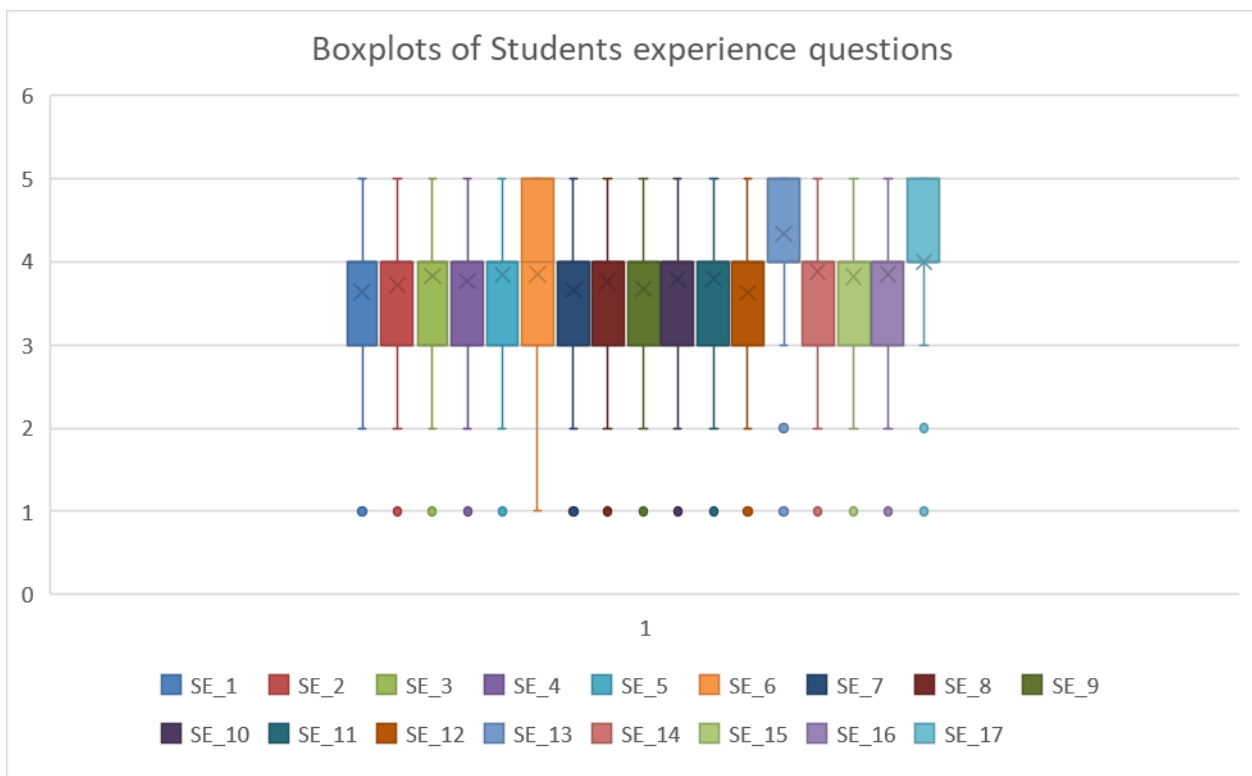


Table 13: Data Separation according to the ongoing degree course

Degree course / Students are at their ease with each other	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	3,11%	2,48%	32,30%	50,93%	11,18%	100,00%

Master's	1,52%	6,06%	27,27%	62,12%	3,03%	100,00%
Total	2,64%	3,52%	30,84%	54,19%	8,81%	100,00%

Degree course / Students are respectful with each other	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor 's	1,24%	3,11%	31,68%	45,96%	18,01%	100,00%
Master's	0,00%	7,58%	34,85%	48,48%	9,09%	100,00%
Total	0,88%	4,41%	32,60%	46,70%	15,42%	100,00%

Degree course / Locations is functional to my needs of studying or staff contact	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	3,11%	3,11%	18,63%	54,04%	21,12%	100,00%
Master's	0,00%	6,06%	27,27%	54,55%	12,12%	100,00%
Total	2,20%	3,96%	21,15%	54,19%	18,50%	100,00%

Degree course / The faculty organization/structure is clear to me	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,24%	6,21%	36,02%	36,02%	20,50%	100,00%
Master's	3,03%	12,12%	25,76%	40,91%	18,18%	100,00%
Total	1,76%	7,93%	33,04%	37,44%	19,82%	100,00%

Degree course / Announcements from the administrative staff are clear	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,24%	7,45%	14,91%	52,17%	24,22%	100,00%
Master's	6,06%	7,58%	19,70%	45,45%	21,21%	100,00%
Total	2,64%	7,49%	16,30%	50,22%	23,35%	100,00%

Degree course / The administrative staff is prompt to support students' needs	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,24%	4,97%	23,60%	43,48%	26,71%	100,00%
Master's	6,06%	7,58%	18,18%	43,94%	24,24%	100,00%
Total	2,64%	5,73%	22,03%	43,61%	25,99%	100,00%

Degree course / Teaching staff is empathic	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,24%	6,21%	36,02%	36,02%	20,50%	100,00%
Master's	3,03%	12,12%	25,76%	40,91%	18,18%	100,00%
Total	1,76%	7,93%	33,04%	37,44%	19,82%	100,00%

Degree course / Teaching staff provide the student support that I need	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	3,11%	4,97%	22,98%	49,07%	19,88%	100,00%
Master's	4,55%	4,55%	22,73%	51,52%	16,67%	100,00%
Total	3,52%	4,85%	22,91%	49,78%	18,94%	100,00%

Degree course / Teachers are engaged in the teaching process	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,24%	8,07%	27,33%	49,07%	14,29%	100,00%
Master's	3,03%	9,09%	18,18%	56,06%	13,64%	100,00%
Total	1,76%	8,37%	24,67%	51,10%	14,10%	100,00%

Degree course / Teachers are digitally competent	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	2,48%	6,21%	21,74%	50,93%	18,63%	100,00%
Master's	0,00%	7,58%	16,67%	62,12%	13,64%	100,00%
Total	1,76%	6,61%	20,26%	54,19%	17,18%	100,00%

Degree course / Teaching materials are not too difficult to understand	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,24%	6,83%	24,84%	47,20%	19,88%	100,00%
Master's	1,52%	7,58%	18,18%	50,00%	22,73%	100,00%
Total	1,32%	7,05%	22,91%	48,02%	20,70%	100,00%

Degree course / Teaching materials are appealing	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	2,48%	7,45%	29,81%	45,34%	14,91%	100,00%
Master's	1,52%	10,61%	31,82%	37,88%	18,18%	100,00%
Total	2,20%	8,37%	30,40%	43,17%	15,86%	100,00%

Degree course / Lessons are available to students remotely on the internet	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	0,00%	1,24%	8,70%	41,61%	48,45%	100,00%
Master's	3,03%	3,03%	6,06%	43,94%	43,94%	100,00%
Total	0,88%	1,76%	7,93%	42,29%	47,14%	100,00%

Degree course / Lessons catch my attention and stimulate my curiosity	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	0,62%	4,35%	24,22%	45,96%	24,84%	100,00%
Master's	1,52%	9,09%	18,18%	46,97%	24,24%	100,00%
Total	0,88%	5,73%	22,47%	46,26%	24,67%	100,00%

Degree course / Technology and learning portals (e.g. Moodle, Learning Management System) are effectively used	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	3,11%	5,59%	21,74%	49,07%	20,50%	100,00%
Master's	1,52%	4,55%	24,24%	42,42%	27,27%	100,00%
Total	2,64%	5,29%	22,47%	47,14%	22,47%	100,00%

Degree course / ICT Tools and platforms are intuitively used	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,86%	4,35%	22,98%	50,93%	19,88%	100,00%
Master's	0,00%	7,58%	18,18%	51,52%	22,73%	100,00%
Total	1,32%	5,29%	21,59%	51,10%	20,70%	100,00%

Degree course / I'm overall satisfied with my choice to study at this University	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	2,48%	4,97%	13,66%	44,72%	34,16%	100,00%
Master's	3,03%	6,06%	12,12%	56,06%	22,73%	100,00%
Total	2,64%	5,29%	13,22%	48,02%	30,84%	100,00%

7.4. Students' learning outcome

With regards to the Students' Learning Outcome the questionnaire includes 9 questions. The results from each question are presented with the following codification:

I believe that studying at this University:

- SLO_1: Matches my learning expectations.
- SLO_2: Is really enjoyable.
- SLO_3: Is developing my soft-skills.
- SLO_4: Is giving me the opportunity to meet significant people for my life and my profession.
- SLO_5: Is giving me the opportunity to find a job.
- SLO_6: Will impact my professional image/reputation.
- SLO_7: Will help me in acquiring a job or career-related knowledge and skills.
- SLO_8: Will help me develop my critical thinking.
- SLO_9: Will help me in team working.

Frequency distribution is presented in Table 14 while box plot for each question is presented in Figures 15. Figure 16 depicts the box plots of the questions and Table 15 presents their descriptive statistics. For the analysis and the creation of charts Excel was used.

Again, distributions are concentrated on high values. In particular, SLO_1 (Matches my learning expectations), SLO_2 (Is really enjoyable), SLO_3 (Is developing my soft-skills) and SLO_7 (Will help me in acquiring a job or career-related knowledge and skills) present more than 70% focused on the opinion "Agree" and "Strongly agree". Small standard deviations, less than 1 quite always, denote the little variability of scores. Also looking at boxplots, we can appreciate an unusual shape of SLO_1 and SLO_3 distributions denoting an extraordinary lack of variability.

Table 14: Frequency Distribution of Students' Learning Outcome Questions

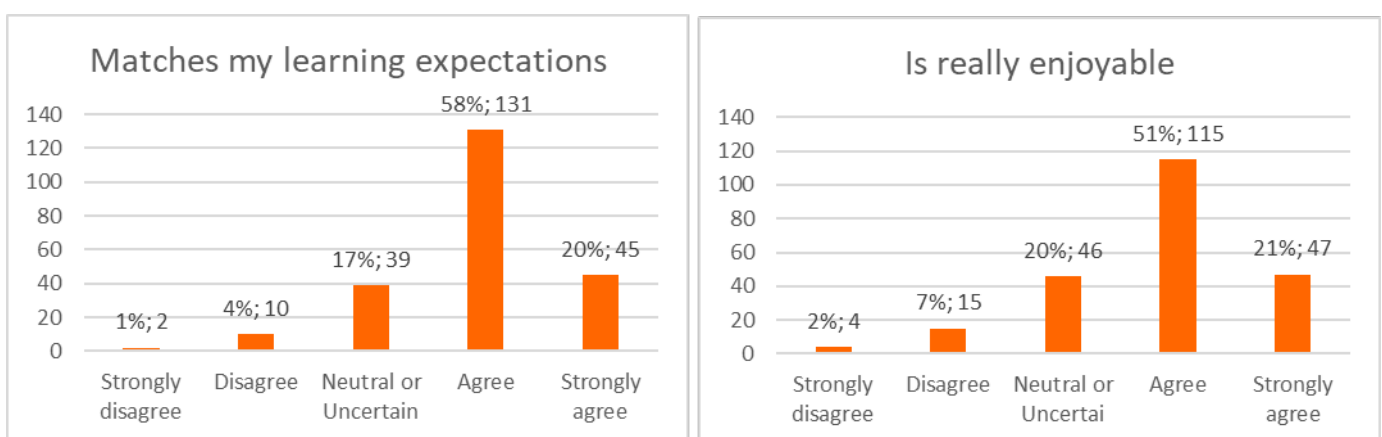
Modality	SLO_1		SLO_2		SLO_3		SLO_4		SLO_5	
	n	%	n	%	n	%	n	%	n	%
1	2	1%	4	2%	7	3%	19	8%	4	2%
2	10	4%	15	7%	14	6%	38	17%	13	6%
3	39	17%	46	20%	35	15%	78	34%	81	36%
4	131	58%	115	51%	126	56%	68	30%	94	41%

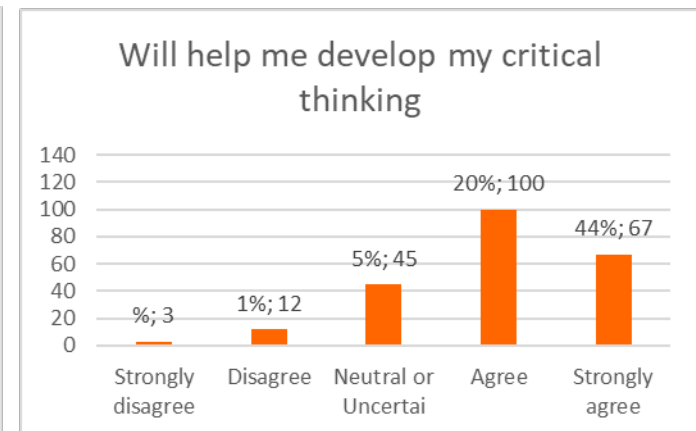
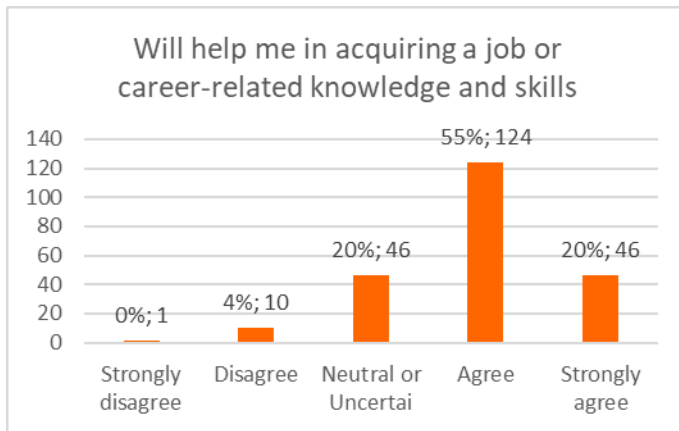
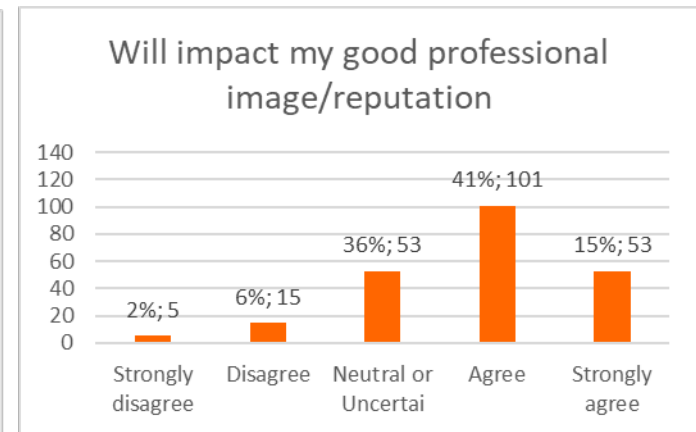
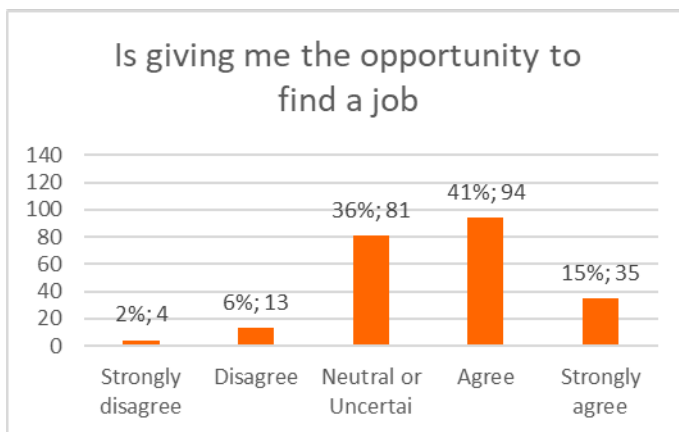
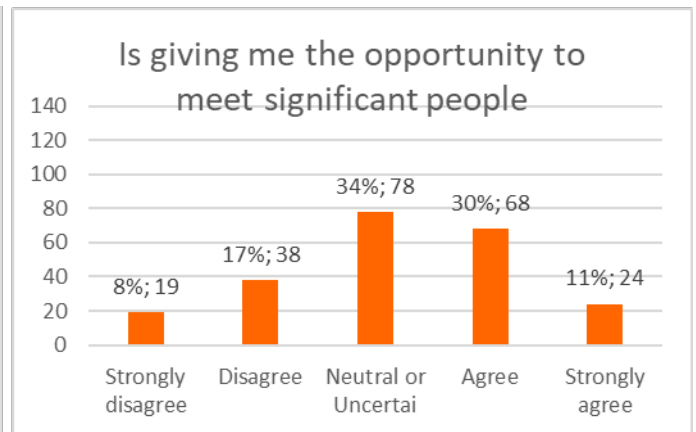
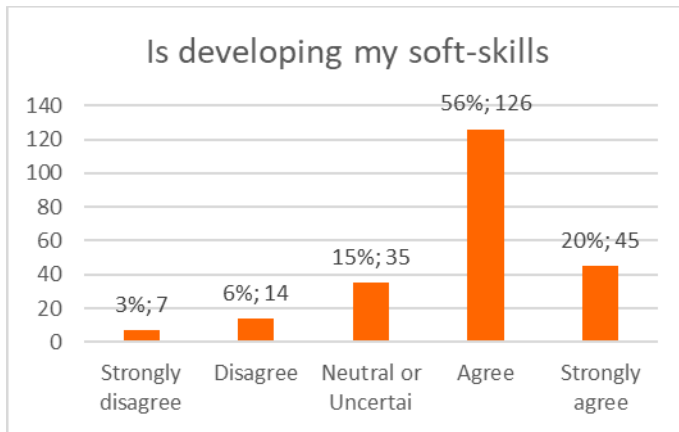
5	45	20%	47	21%	45	20%	24	11%	35	15%
Total	227	100%	227	100%	227	100%	227	100%	227	100%
	SLO_6		SLO_7		SLO_8		SLO_9			
Modality	n	%	n	%	n	%	n	%		
1	5	2%	1	0%	3	1%	12	5%		
2	15	7%	10	4%	12	5%	33	15%		
3	53	23%	46	20%	45	20%	66	29%		
4	101	44%	124	55%	100	44%	79	35%		
5	53	23%	46	20%	67	30%	37	16%		
Total	227	100%	227	100%	227	100%	227	100%		

Table 15: Descriptive Statistics of Students' Learning Outcome Items

	SLO_1	SLO_2	SLO_3	SLO_4	SLO_5	SLO_6	SLO_7	SLO_8	SLO_9
N	227,00	227,00	227,00	227,00	227,00	227,00	227,00	227,00	227,00
Missing	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Ar. Mean	3,91	3,82	3,83	3,18	3,63	3,80	3,90	3,95	3,42
St. Dev.	0,79	0,90	0,92	1,09	0,87	0,95	0,78	0,91	1,09
Min	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Q1	4,00	3,00	4,00	2,50	3,00	3,00	3,50	3,00	3,00
Median	4,00	4,00	4,00	3,00	4,00	4,00	4,00	4,00	4,00
Q3	4,00	4,00	4,00	4,00	4,00	4,00	4,00	5,00	4,00
Max	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00

Figure 15: Barplot of Students' Learning Outcome Questions 1 to 9





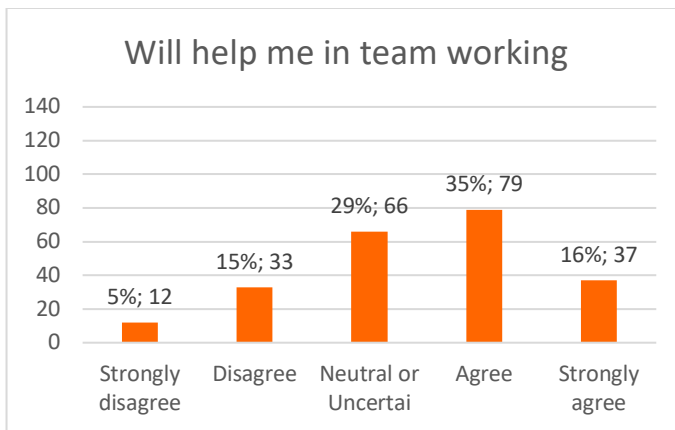
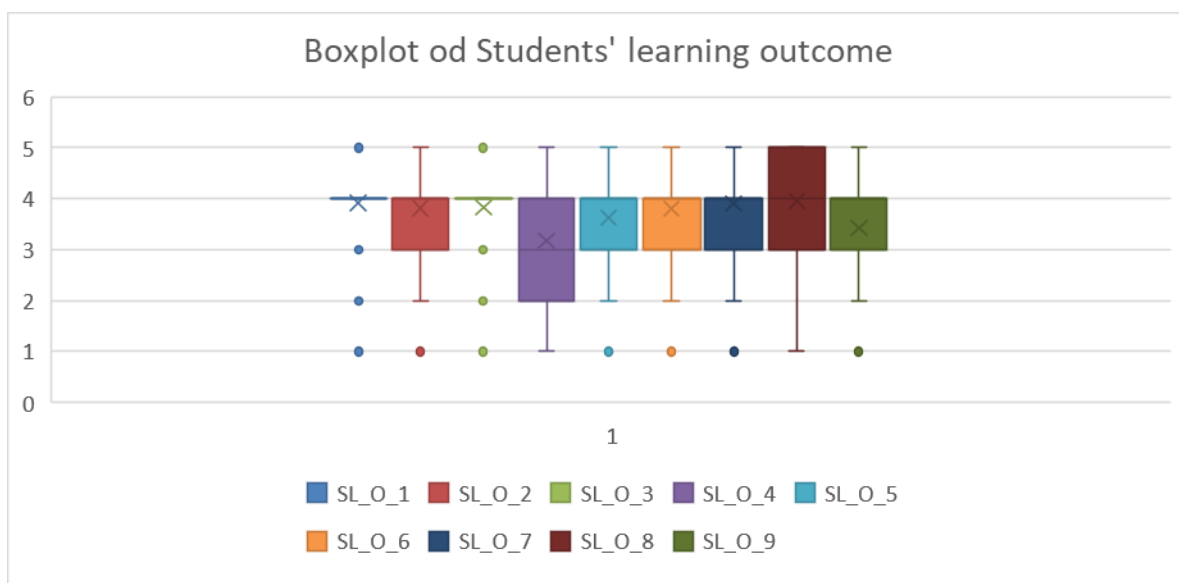


Figure 16: Boxplot of Students' Learning Outcome Items



In table 16 we present data separated by the ongoing degree course highlighting that no significant differences occur between the two sub-samples.

Table 16: Data Separation according to the ongoing degree course

Degree course / Matches my learning expectations	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	0,62%	3,73%	18,01%	59,01%	18,63%	100,00%
Master's	1,52%	6,06%	15,15%	54,55%	22,73%	100,00%
Total	0,88%	4,41%	17,18%	57,71%	19,82%	100,00%

Degree course / Is really enjoyable	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,86%	6,21%	19,88%	50,31%	21,74%	100,00%
Master's	1,52%	7,58%	21,21%	51,52%	18,18%	100,00%
Total	1,76%	6,61%	20,26%	50,66%	20,70%	100,00%

Degree course / Is developing my soft-skills	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor	3,11%	4,97%	16,15%	54,66%	21,12%	100,00%
Master	3,03%	9,09%	13,64%	57,58%	16,67%	100,00%
Total	3,08%	6,17%	15,42%	55,51%	19,82%	100,00%

Degree course / Is giving me the opportunity to meet significant people for my life and my profession	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	9,32%	15,53%	34,78%	28,57%	11,80%	100,00%
Master's	6,06%	19,70%	33,33%	33,33%	7,58%	100,00%
Total	8,37%	16,74%	34,36%	29,96%	10,57%	100,00%

Degree course / Is giving me the opportunity to find a job	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,24%	5,59%	38,51%	37,27%	17,39%	100,00%
Master's	3,03%	6,06%	28,79%	51,52%	10,61%	100,00%
Total	1,76%	5,73%	35,68%	41,41%	15,42%	100,00%

Degree course / Will impact my good professional image/reputation	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	1,86%	5,59%	22,36%	44,72%	25,47%	100,00%
Master's	3,03%	9,09%	25,76%	43,94%	18,18%	100,00%
Total	2,20%	6,61%	23,35%	44,49%	23,35%	100,00%

Degree course / Will help me in acquiring a job or career-	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total

related knowledge and skills						
Bachelor's	0,62%	2,48%	18,01%	57,76%	21,12%	100,00%
Master's	0,00%	9,09%	25,76%	46,97%	18,18%	100,00%
Total	0,44%	4,41%	20,26%	54,63%	20,26%	100,00%

Degree course / Will help me develop my critical thinking	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	0,62%	3,73%	19,88%	44,72%	31,06%	100,00%
Master's	3,03%	9,09%	19,70%	42,42%	25,76%	100,00%
Total	1,32%	5,29%	19,82%	44,05%	29,52%	100,00%

Degree course / Will help me in team working	Strongly Disagree	Disagree	Neutral or uncertain	Agree	Strongly Agree	Total
Bachelor's	5,59%	13,04%	29,81%	34,16%	17,39%	100,00%
Master's	4,55%	18,18%	27,27%	36,36%	13,64%	100,00%
Total	5,29%	14,54%	29,07%	34,80%	16,30%	100,00%

7.5. Customised section

In that section each partner set some questions to the students regarding a possible interesting topic to investigate. e-Campus chose to investigate the following:

- CS_1 : To foster students' learning, teachers use a second foreign language aimed at comparing specific language systems for teaching
- CS_2 : To foster students' learning, studying in a second foreign language is useful
- CS_3 : Based on my experience, I believe that thanks to the University system, students are stimulated into interacting one each other
- CS_4: Based on my experience, I believe that the university structure fosters the students' community
- CS_5: Based on my experience, I believe that intensive lectures are effective

The analysis and the extraction of results was held using Excel. Frequency distribution is presented in Table 17 while barplot for each question is presented in Figure 17 as well as the box plots. Table 18 presents descriptive statistics. Please, note that the total number of respondents in this section is 221.

Table 17: Frequency Distribution of Students' Distance Learning Experience Questions

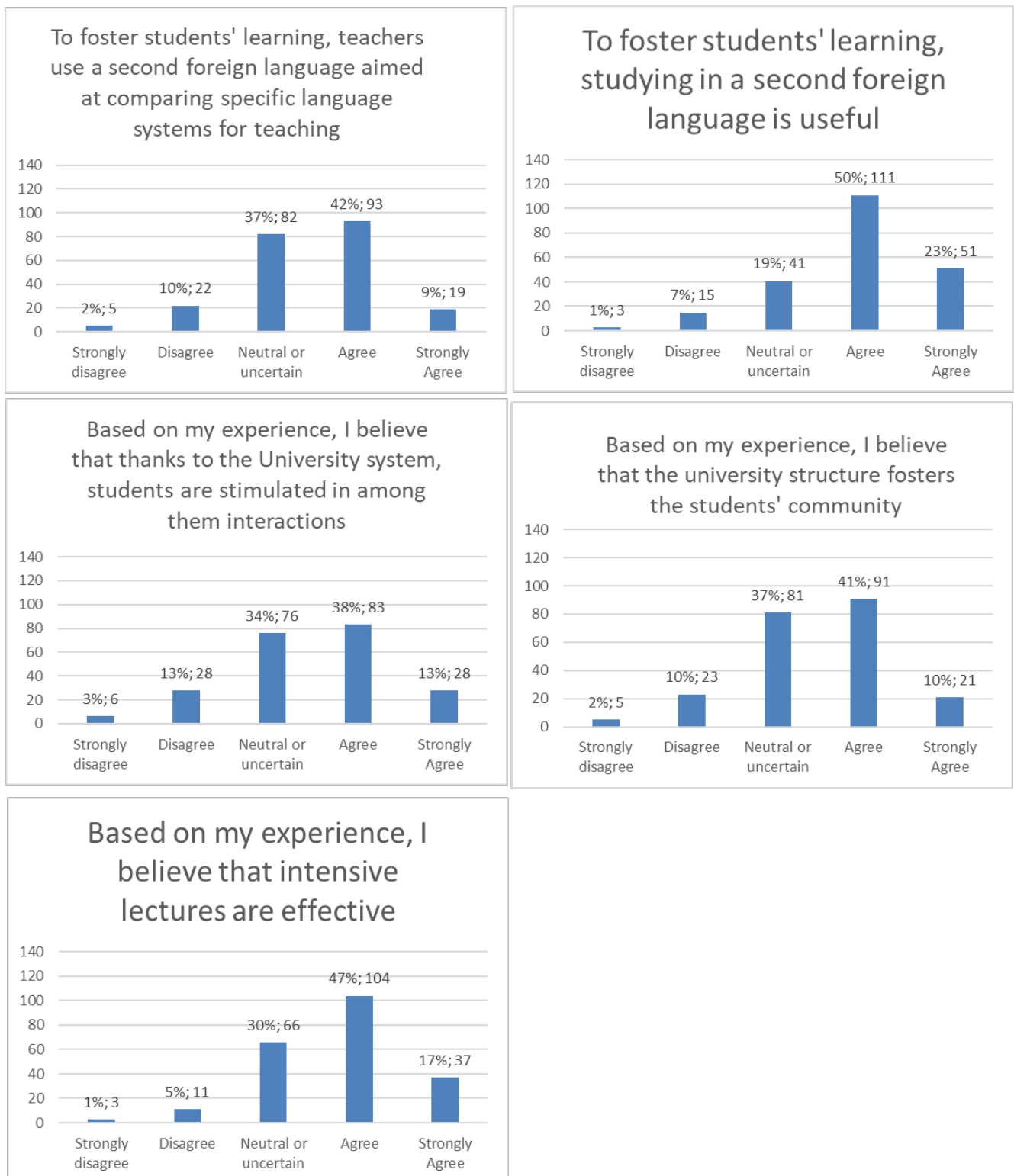
Modality	CS_1		CS_2		CS_3	
	n	%	n	%	n	%
1	5	2%	3	1%	6	3%
2	22	10%	15	7%	28	13%
3	82	37%	41	19%	76	34%
4	93	42%	111	50%	83	38%
5	19	9%	51	23%	28	13%
Total	221	100%	221	100%	221	100%

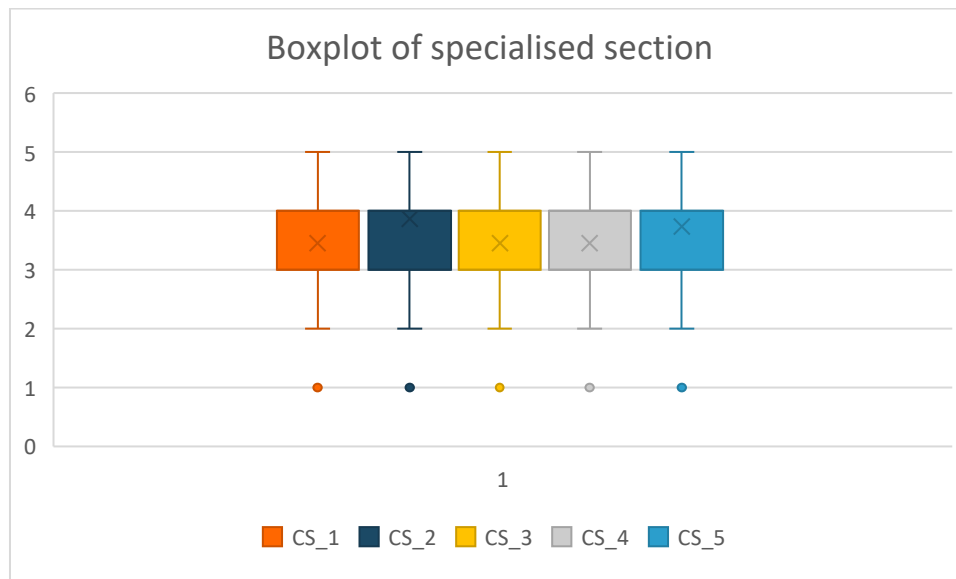
Modality	CS_4		CS_5	
	n	%	n	%
1	5	2%	3	1%
2	23	10%	11	5%
3	81	37%	66	30%
4	91	41%	104	47%
5	21	10%	37	17%
Total	221	100%	221	100%

Table 18: Descriptive Statistics of Students' Distance Learning Experience Items

	CS_1	CS_2	CS_3	CS_4	CS_5
N	221,00	221,00	221,00	221,00	221,00
Missing	6,00	6,00	6,00	6,00	6,00
Ar. Mean	3,45	3,87	3,45	3,45	3,45
St. Dev.	0,87	0,89	0,96	0,89	0,87
Min	1,00	1,00	1,00	1,00	1,00
Q1	3,00	3,00	3,00	3,00	3,00
Median	4,00	4,00	4,00	4,00	4,00
Q3	4,00	4,00	4,00	4,00	4,00
Max	5,00	5,00	5,00	5,00	5,00

Figure 17: Barplot and Boxplot of Students' Distance Learning Experience Questions





7.6 SWOT Analysis

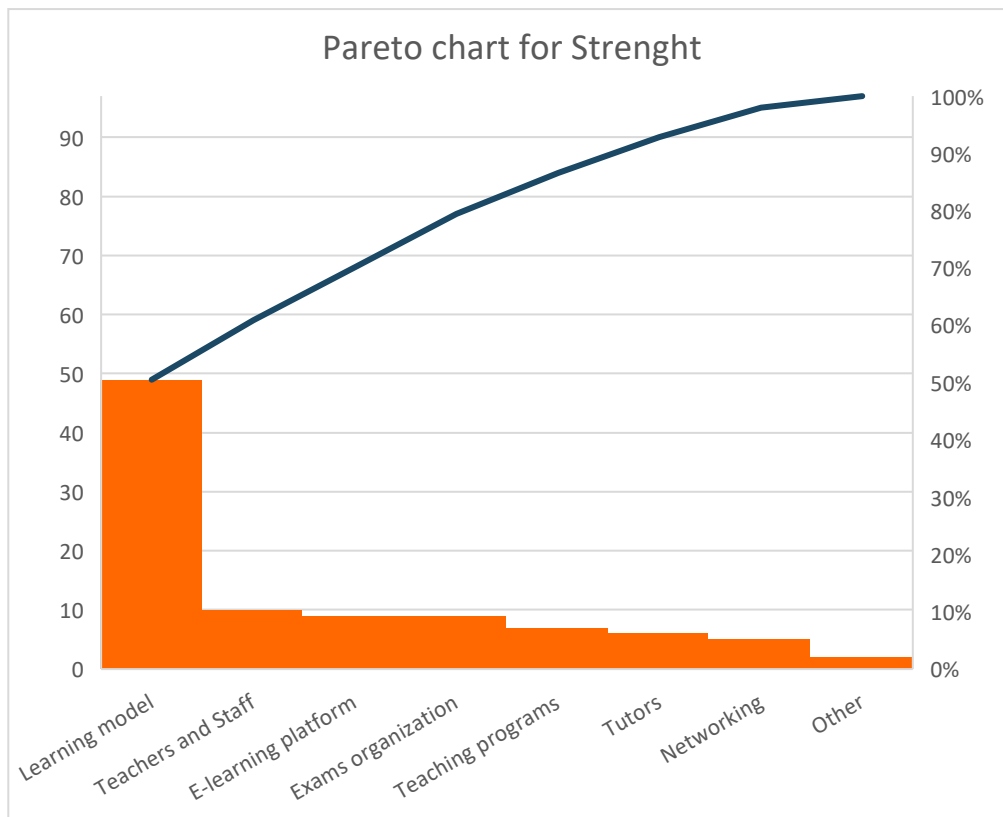
7.6.1 Analysis of strengths

The responses that we received regarding the main strengths of e-campus were measured and categorized in Table 19. For the extraction of Pareto chart (Figure 18) Excel was used. It is important to consider that the number of students who responded to SWOT questions (not compulsory) is lower than the overall number of respondents to the questionnaire. This does not prevent us from drawing some important conclusions. The answers show that the main strength of e-campus according to the students is the Learning model (51%).

Table 19: Strengths Observed

Strengths	n	%
Learning model	49	51%
Teachers and Staff	10	61%
E-learning platform	9	70%
Exams organization	9	79%
Teaching programmes	7	87%
Tutors	6	93%
Networking	5	98%
Other	2	100%
Total	97	

Figure 18: Pareto Chart for Strengths Observed



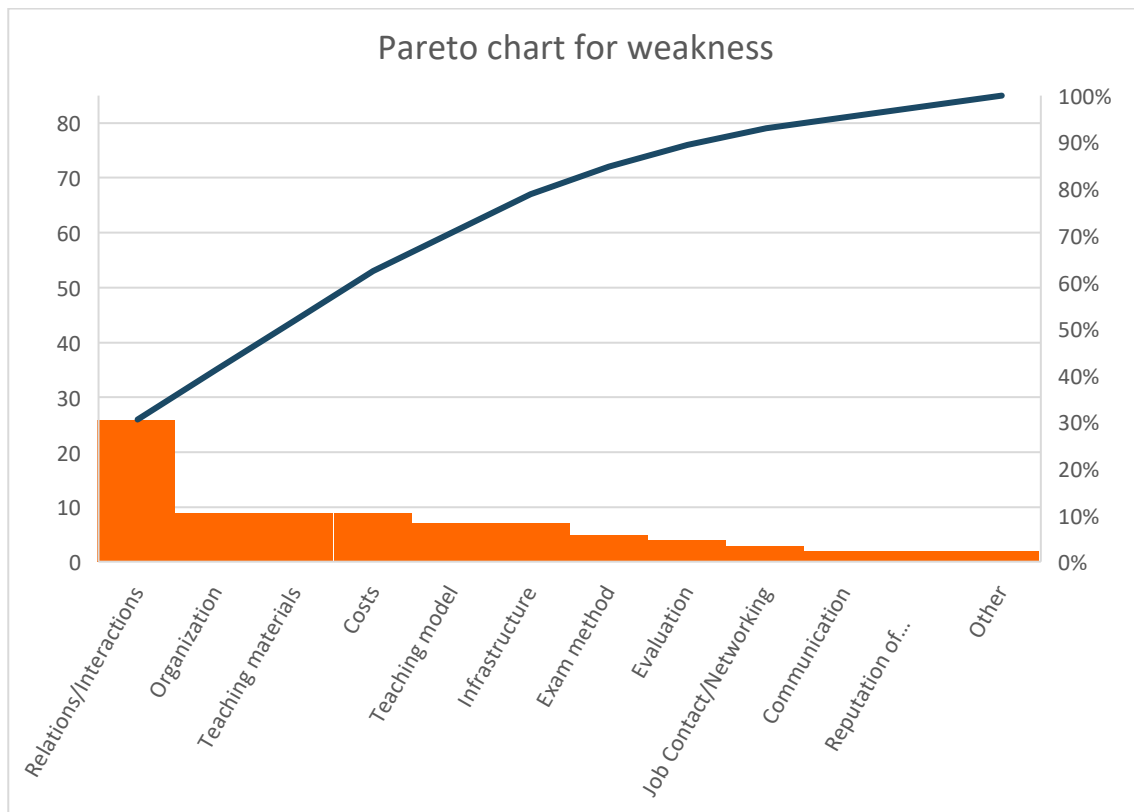
7.6.2 Analysis of weaknesses

The responses that we received regarding the main weaknesses were measured and categorised in Table 20. For the extraction of Pareto chart (Figure 19) Excel was used. The answers show that the main weakness of e-Campus according to the students is Relation/interactions.

Table 20: Weaknesses Observed

Weakness	n	%
Relations/Interactions	26	31%
Organization	9	41%
Teaching materials	9	52%
Costs	9	62%
Teaching model	7	71%
Infrastructure	7	79%
Exam method	5	85%
Evaluation	4	89%
Job Contact/Networking	3	93%
Communication	2	95%
Reputation of university/ Prejudice	2	98%
Other	2	100%
Total	85	

Figure 19: Pareto Chart for Weaknesses Observed



7.6.3 Analysis of opportunities

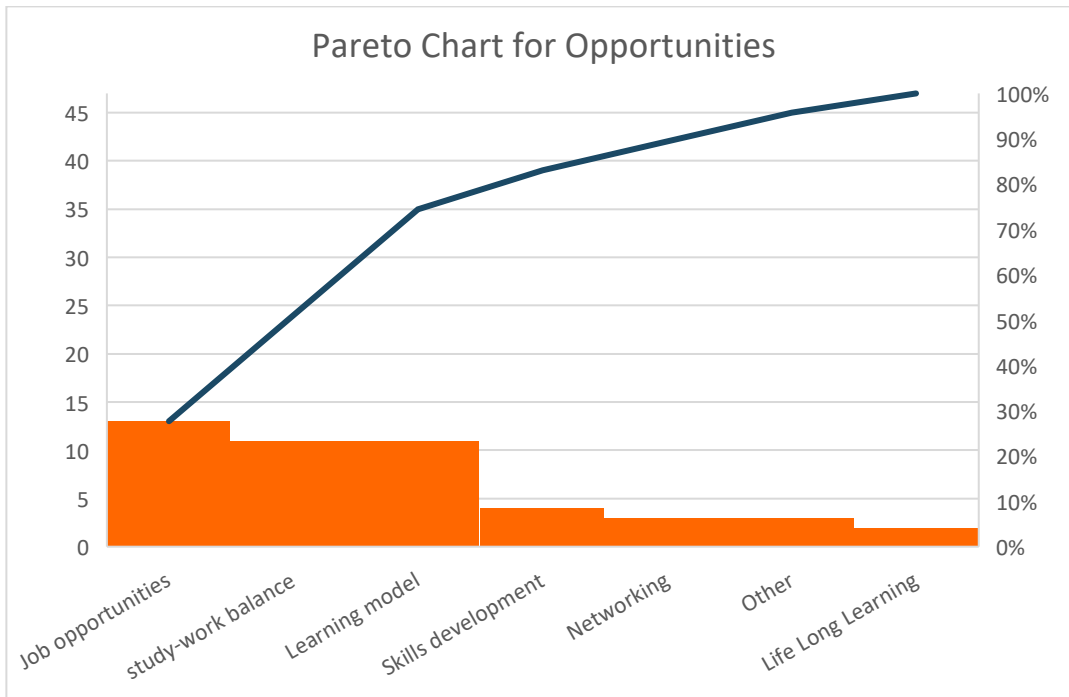
The responses that we received regarding the main opportunities were measured and categorised in Table 21. For the extraction of Pareto chart (Figure 20) Excel 17 was used. The answers show that the main opportunity of e-Campus according to the students is job opportunities. It is important to note that the number of students who responded to the questions about opportunities is 47, for this reason the conclusions cannot be considered as reliable.

Table 21: Opportunities observed

Opportunities	n	%
Job opportunities	13	28%
study-work balance	11	51%
Learning model	11	74%
Skills development	4	83%
Networking	3	89%
Life Long Learning	2	94%
Other	3	100%

Total 47

Figure 20: Pareto Chart for Opportunities Observed



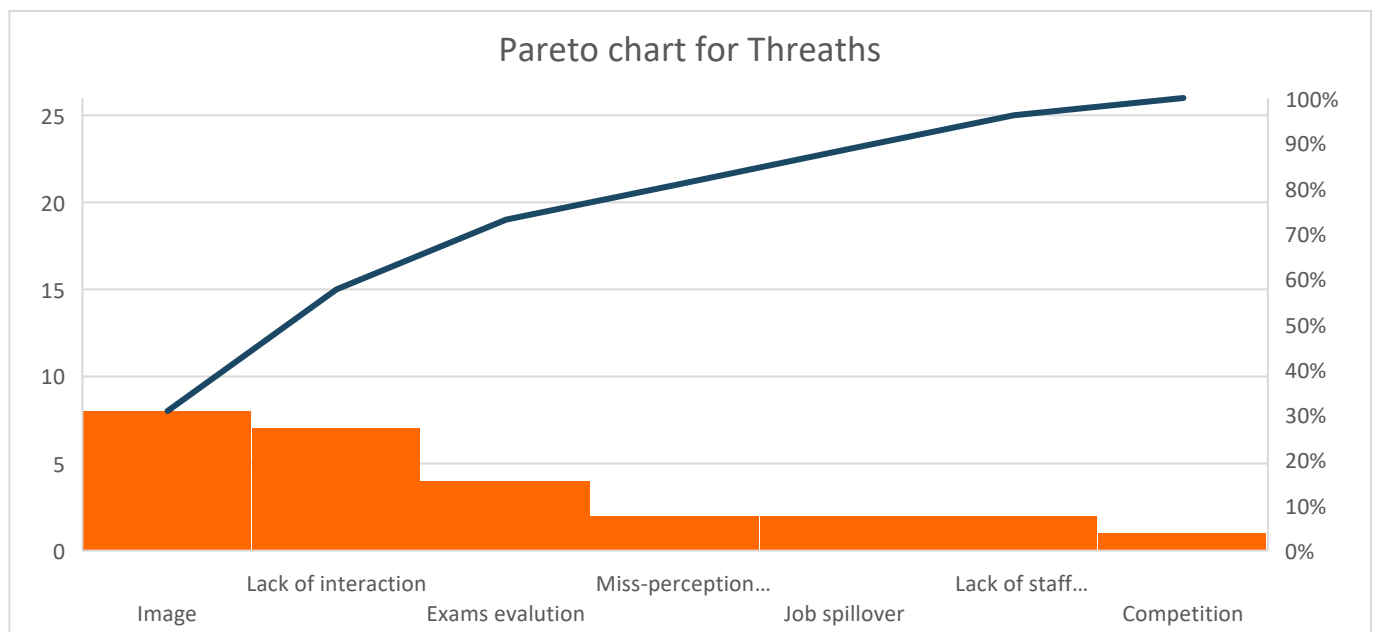
7.6.4. Analysis of threats

The responses that we received regarding the main threats observed while attending e-Campus were measured and categorised in Table 22. For the extraction of Pareto chart (Figure 21) Excel was used. The answers show that the main threats is, according to the students, image. It is important to note, once again, that the number of students who responded to SWOT questions (not compulsory) is lower than the overall number of respondents to the multiple-choice questions, especially for the analysis of threats. The total number of answers is only 26; as a result, this analysis is less reliable than the others.

Table 22: Threats observed

Threats	n	%
Image	8	31%
Lack of interaction	7	58%
Exam evaluation	4	73%
Miss-perception of study	2	81%
Job spillover	2	88%
Lack of support from the staff	2	96%
Competition	1	100%
Total	26	100,00%

Figure 21: Pareto Chart for Threats Observed



CONCLUSIVE REMARKS

The e-Campus University as an online university has made technological innovation the central element of its training offer. Technology defines the identity of the university, guiding organization, internal processes, workflows and communication, at different level. The e-Campus university was born to respond to some known weaknesses of the traditional university system, in particular to the emerging needs of new skills and professional profiles, more attractive in the labour market. In the last period of pandemic crisis, this specificity has constituted even more a resource and an opportunity to improve processes in the light of new needs and requirements.

The main aim of e-Campus is to guarantee to students a diffusive learning experience at low cost continuing to live in their own territory. This objective is achieved through a great effort in the monitoring and control procedures of the processes which affect all the actors involved: organizational staff, teachers, tutors (study course tutors, disciplinary tutors, technical tutors), students.

The learning model is confirmed as an element of strength, also according to the student's perspective. At the same time, this model requires a great deal of effort from online teachers in acquiring digital skills, to be able to effectively prepare quality online lessons, keeping student engagement high. The work to prepare online lessons is in fact underestimated from teachers' experience, considering the emerged difficulty to rethink the traditional face-to-face lesson format for the online classroom.

Digital innovation is a key resource but also a factor to manage: the introduction of a digital innovation often implies the reconstruction of a process, increasing the level of stress and uncertainty of all the actors involved.

In this complex teaching-learning process, the tutors at different level (study course, disciplinary and technical tutors) are central to adapt the learning experience to the students' needs, being a strength of the e-Campus model.

In the future, the perspective is to move more and more towards adaptive learning, with a particular attention to the relational and laboratorial/experiential dimensions, that students, but also teachers and academic bodies, consider areas of improvements. In the next academic years, in fact the e-Campus will work to:

- increase the relationship with the territory through its numerous physical and disseminated locations;
- develop the flexibility of an integrated distance learning combining personalization and the assistance of online and local tutors, becoming a "diffused university" through the mix distance-presence on the territory;
- integrate cognitive, personal, logistic and administrative elements in the University Information System;
- develop of a punctual and widespread inbound orientation/vocational activity to counter the widespread prejudice on online training, that also emerged as one of the main threats from the students' survey.