



SQELT PROJECT

SUSTAINABLE QUALITY ENHANCEMENT IN HIGHER EDUCATION LEARNING AND TEACHING. Integrative Core Dataset and Performance Data Analytics



Key Action: **Cooperation for innovation and the exchange of good practices**
Action Type: **Strategic Partnerships for higher education**

Partners: evaluation Agency Baden-Wuerttemberg, UNIVERSIDADE DE AVEIRO, BIRMINGHAM CITY UNIVERSITY, UNIVERSITEIT GENT, UNIWERSYTET JAGIELLONSKI, UNIVERSITÄT FÜR WEITERBILDUNG KREMS, UNIVERSITEIT LEIDEN, UNIVERSITÀ DEGLI STUDI DI MILANO, UNIVERSITETET I OSLO, Centro de Investigação de Políticas do Ensino Superior

<https://ec.europa.eu/programmes/erasmus-plus/projects/eplu-project-details/#project/b8a93e06-2000-4a82-9fac-90b3bcacadee>
<https://www.evalag.de/en/research/sqelt/the-project/>

Intellectual Output 01:

Benchlearning Report on Project Partner HEIs' Performance Data Management Models

The Case of the University of Aveiro (UA)

Maria João Rosa

José Alberto Rafael

Daniela Costa

15th of October 2018

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

Table of Contents

List of Acronyms	3
Executive summary	4
Introduction.....	7
The Portuguese Higher Education Context	8
The University of Aveiro Internal Quality Assurance System – SIGQ_UA	10
Learning and Teaching Quality Assurance at the University of Aveiro	13
University of Aveiro Performance Data Management Model	18
University of Aveiro Performance Data Management Model – Strengths, Weaknesses, Opportunities and Threats.....	22
References.....	25
Annex 1 – Template for performance indicators sets for comparative analysis of performance data management models (“Benchlearning Report”) of SQELT partners HEIs – The case of the University of Aveiro	26
Table 1. Performance types and PIs of L&T environment.....	26
Table 2. Performance types and PIs of teaching.....	32
Table 3. Performance types and PIs of learning.....	34
Table 4. Performance types and PIs of learning outcomes and their assessment	35

List of Acronyms

A3ES	Higher Education Evaluation and Accreditation of Agency
ACMP	Academic Cycle Monitoring Programme
ANQEP	National Agency for Professional Teaching and Qualification
BP	Good Practice
CC	Scientific Council
CCADUA	University of Aveiro Coordinating Council for Performance Evaluation
CD	Course Director
CNA	National Call for Accessing Public Higher Education
CP	Pedagogical Council
DSD	Distribution of Teaching Duties
EDUA	University of Aveiro Doctoral School
EUA	European University Association
FCT	Foundation for Science and Technology
GPE	Strategic Planning Office
HEI	Higher Education Institution
L&T	Learning and Teaching
PACO	Online Academic Portal
PI	Performance Indicator
PM	Improvement Plan
PMCA	Academic Cycle Monitoring Programme
PMO	Mandatory Improvement Plan
PT-UA	University of Aveiro Tutoring Programme
QA	Quality Assurance
R&D	Research and Development
SAS	Social Action Services
SBIDM	Library, Document Management, and Museology Services
SCIRP	Communication, Image, and Public Relations Services
SCTN	National Scientific and Technological System
SGA	Academic Management Services
SGRHF	Financial and Human Resources Management Services
SGTL	Technical and Logistical Management Services
SIGACAD	University of Aveiro Integrated System for Academic Management
SIGQ_UA	University of Aveiro Internal Quality Assurance System
SIUA	University of Aveiro Information System
STIC	Information and Communication Technologies Services
SubGQ_curso	Study Cycles Quality Assurance Subsystem
SubGQ_PD	Doctoral Programmes Quality Assurance Subsystem
SubGQ_UC	Course Unit Quality Assurance Subsystem
UA	University of Aveiro
UC	Course Unit
UO	Organic Unit

Executive summary

The University of Aveiro (UA) was created in 1973, and quickly became one of the most dynamic and innovative universities in Portugal. It is now a public foundation under private law, and continues to develop and implement its mission to provide undergraduate and postgraduate education, to generate research and promote cooperation with society.

In 2009, following the decision to become a public foundation, the University introduced a new management model and clearly assumed quality assurance (QA) as one of the institution's strategic vectors. The UA internal quality assurance system (SIGQ_UA) is the set of processes that guarantee the quality of activity in the institution's mission areas (Education, Research, and Cooperation with the Society). It involves all stakeholders, internal and external, who have a relation with the University.

Learning and teaching (L&T) is the most developed area of the SIGQ_UA, particularly because it was the first to be developed and it is a far more complex area regarding the processes and procedures associated with it. The UA is committed to the permanent consolidation of the quality of its educational offer, with special attention to the needs of the society and of the job market, the processes of formal accreditation and the academic success and well-being of its students. Overall, a set of different but interrelated mechanisms exist to assure the quality of L&T at UA: i) procedures for creating, monitoring and reviewing study cycles; ii) internal QA subsystems for the courses (SubGQ_UC, with a long tradition in the UA), study cycles (SubGQ_Curso) and doctoral programmes (SubGQ_PD); iii) the platforms ACMP (Academic Cycle Monitoring Program), Data Portal and PACO (Online Academic Portal); iv) the Tutoring Program; v) the integrated program for the reception, guidance, and monitoring of students and support for teachers (FICA); and vi) teaching support mechanisms. All these mechanisms simultaneously involve and rely on a set of performance data and indicators which are collected, treated, analysed and used for decision-making and quality improvement, constituting the UA Performance Data Management Model for L&T. Mapping the UA model with the initial SQELT list of performance data and indicators shows that most of them exist and are used in the University, although some of them in a non-systematic way.

SWOT Analysis

Strengths

- A consolidated QA sub-system for the course units (SubGQ_UC), which is recognised by and appropriate for the institution;
- A consolidated Information System (SIUA), with a high level of maturity, capable of providing an adequate response to the demands of the L&T internal QA system;
- A Data Portal with essential information for the management and decision-making;
- An Information System developed using the skills and knowledge of the personnel at UA, which permits it to grow and adapt itself to the specificities of the institution.

Weaknesses

- Not all the data that could be relevant for L&T quality improvement is collected and/or treated;
- Some interesting performance indicators (PIs) are not yet incorporated in the Data Portal;
- Some of the subsystems which constitute the UA Information System need to be reviewed in order to improve factors of usability, accessibility and the quality of information search;
- Some relevant data and PIs are still not available to the UA community at large.

Opportunities

- The institutional capacity to change (by adapting the information systems to current technological trends and greater involvement of users in the design and validation processes of the improvements to be implemented);
- Favourable climate for the consolidation of the internal QA system and the broadening of the procedures of performance analysis;
- The degree of maturity and consolidation of the SubGQ_UC which contributes to reinforce the actors' involvement;
- Participation in international rankings and research projects (e.g. SQELT).

Threats

- The monitoring of performance quality centred on multiple numerical data may lead to an excessive and not necessarily positive quantitative analysis regarding the measurement of L&T quality;

- The danger of not being able to adequately relate the PIs with the real functioning of the institution.

To conclude, the UA team assumes that its participation in the SQELT project will provide a relevant opportunity to engage in discussing and exchanging ideas on how L&T quality can be adequately assessed, monitored, assured and improved within higher education institutions (HEIs). The UA team expects that the project outputs will contribute to the University understanding of what different actors (e.g. teachers; students; institutional leadership; people involved and not involved in assuring the quality of L&T), from different countries and institutions, think about the importance of different types of performance data and PIs for L&T quality, as well as about their actual use in several institutions across Europe, framed by a learning analytics approach.

Introduction

The University of Aveiro was created in 1973, and quickly became one of the most dynamic and innovative universities in Portugal. It is now a public foundation under private law, and continues to develop and implement its mission to provide undergraduate and postgraduate education, to generate research and promote cooperation with society.

The UA is attended by about 15,000 students in undergraduate and postgraduate programs, and has achieved a significant position amongst HEIs in Portugal, being one of the top universities regarding the quality of its infrastructures, the strength of its research and the excellence of its staff.

The UA is a highly regarded institution of research led education, constituted by 16 departments, 19 research units, 4 polytechnic schools, interface units, and a vocational education network. Its integrated structure permits the articulation and harmonisation of the teaching and research environments, and enables the construction of individual educational paths, from post-secondary technological specialisation programs to doctoral degrees. Teaching activities are developed in a research-based environment, and throughout the academic year, dozens of national and international conferences are organised, generating a dynamic and multicultural atmosphere for students and staff.

Excellence in research is one of the hallmarks of the University: nine of its 19 research units were classified 'excellent' by international panels under the sponsorship of the Portuguese National Science Foundation in its most recent round of assessments. Research at the UA promotes innovative products and solutions, contributing to the advance of science and technology. It is a privileged partner for companies and other national and international organisations with which it cooperates on numerous projects and for which it provides important services.

The University of Aveiro offers a wide range of degree programs in various areas of knowledge which reflect its multidisciplinary and innovative character and are designed to build student competences in scientific and technical areas that meet the emerging needs of business, industry and society. The University's degree programs are delivered in an atmosphere of research, precision and quality and are organised in three cycles: the 1st cycle lasts three years and results in a Licenciatura degree; the 2nd cycle requires two years to complete a Master's degree; and the 3rd cycle takes between three

and five years to obtain a Doctorate. In the Engineering fields, the UA offers integrated 1st and 2nd cycle programs called Integrated Masters.

The UA is a privileged partner of companies and other national and international entities, with whom it cooperates on various projects and programs and for whom it provides important services. As a quality research institution, the University of Aveiro develops solutions and innovative products that contribute to technological, scientific, cultural and social improvement.

The present report intends to contribute to Output 1 (“Benchlearning Report”) of the SQELT project. We start by presenting a brief overview of the Portuguese higher education context, paying particular attention to those characteristics that are relevant for the goals of the SQELT project. We then introduce the University of Aveiro’s internal QA system (SIGQ-UA) and further explain the mechanisms put in place in the University to assure the quality of its L&T mission. Then, the UA performance data management model is described, and the PI sets used in the University are presented according to the template provided by the SQELT coordination team. Finally, the strengths, weaknesses, opportunities and threats of the UA performance data management model are put forward.

The Portuguese Higher Education Context

The Portuguese higher education system went through a deep process of change in the first decade of the 21st century, following reviews and recommendations by international organisations such as the OECD and ENQA (European Association for Quality Assurance in Higher Education). The actual institutional policy context that impacted the environment of Portuguese HEIs in implementing internal QA systems is characterised by the passing of legislation on the following topics:

- Legal Framework for the Evaluation of Higher Education Law (Law 38/2007, 16th of January, XVII Constitutional Government).
- Legal Framework of Higher Education Institutions (Law 62/2007, 10th of September, XVII Constitutional Government) – RJIES.
- Creation of the Agency for Assessment and Accreditation of Higher Education (A3ES) (Decree-Law 369/2007, 5th of November, XVII Constitutional Government).

The literature refers to evaluation of higher education as a cornerstone between autonomy and accountability. This principle was enhanced in 2007 by the Legal Framework of Higher Education Institutions (RJIES) establishing that “the autonomy of higher education does not preclude [...] the accreditation and external evaluation”. This law also mandates HEIs to organise internal QA mechanisms. Interestingly, dimensions related with transparency, information and publicity of the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ENQA et al., 2015) emerge as key features predicted under the RJIES for internal QA systems. The RJIES was passed by Parliament in 2007 and introduced major changes in the governance structures and processes of Portuguese higher education. By 2009, Portuguese HEIs had adapted their statutes, and consequently their organisational and governance structures, to the new legal framework. The RJIES brought changes in the relationship between State and HEIs; on the other hand, it induced the reconfiguration of HEIs’ governance structures, strengthening organisational rationales such as the enhancement of managerial bodies in detriment of collegial bodies, the centralisation of decision-making processes and the presence of external stakeholders at central and faculty/department/school level.

Further, the new legislation focusing on QA of higher education (Law 38/2007) establishes that HEIs must define a QA policy and take the necessary steps and decisions for its implementation, including the self-evaluation and the participation in external evaluation processes. The legislation also imposes that external quality assessment principles take into account the effectiveness of the internal QA procedures implemented by each HEI. The actual system for QA in higher education is characterized by a program of study cycles’ and institutions’ assessment and accreditation and of a new and independent body for its coordination – the Higher Education Assessment and Accreditation Agency (A3ES). Within this new system, accreditation assumes a preponderant role as a way to assure that study cycles and institutions accomplish minimum requirements conducting to their official recognition.

The new legal framework for quality evaluation and accreditation also determines that institutions should develop a QA policy for their programs, a culture of quality and QA in their activities and a strategy for their continuous quality improvement. Furthermore, the law establishes institutional audits of HEIs’ QA systems. A3ES, with the aim of supporting Portuguese HEIs to implement their own systems of internal QA, has made a concrete proposal about the standards for auditing internal

QA systems and is now responsible for the certification of such systems, on a voluntary basis. The UA internal QA system was certified in 2017.

The University of Aveiro Internal Quality Assurance System – SIGQ_UA

The UA set an ambitious and innovating project since its foundation in 1973, and always behaved in a way characteristic of an institution that thinks strategically. In 2009, when it became a Foundation, the UA introduced a new management model and clearly assumed QA as one of the institution's strategic vectors.

The implementation of an internal QA system at the University (SIGQ_UA) gave consistency and coherence to the set of actions the UA has been developing since 1997, when the Vice-Rector for Quality was created with the goal of fulfilling the institutional policy for the assurance of the established quality and its continued enhancement in the various core mission areas, in line with national and European quality benchmarks in higher education.

The SIGQ_UA is the set of processes that guarantee the quality of activity in the institution's mission areas (Education, Research, and Cooperation with Society). They are transversal and support the institution's functioning (resources and support services) and the internal and external agents, which are in some way related to the system.

These processes are organised in three levels: (1) strategic processes, (2) core processes, and (3) support processes, and are interconnected to ensure the coherence of the system as a whole and highlight the QA mechanisms of the institution's activity (Figure 1).

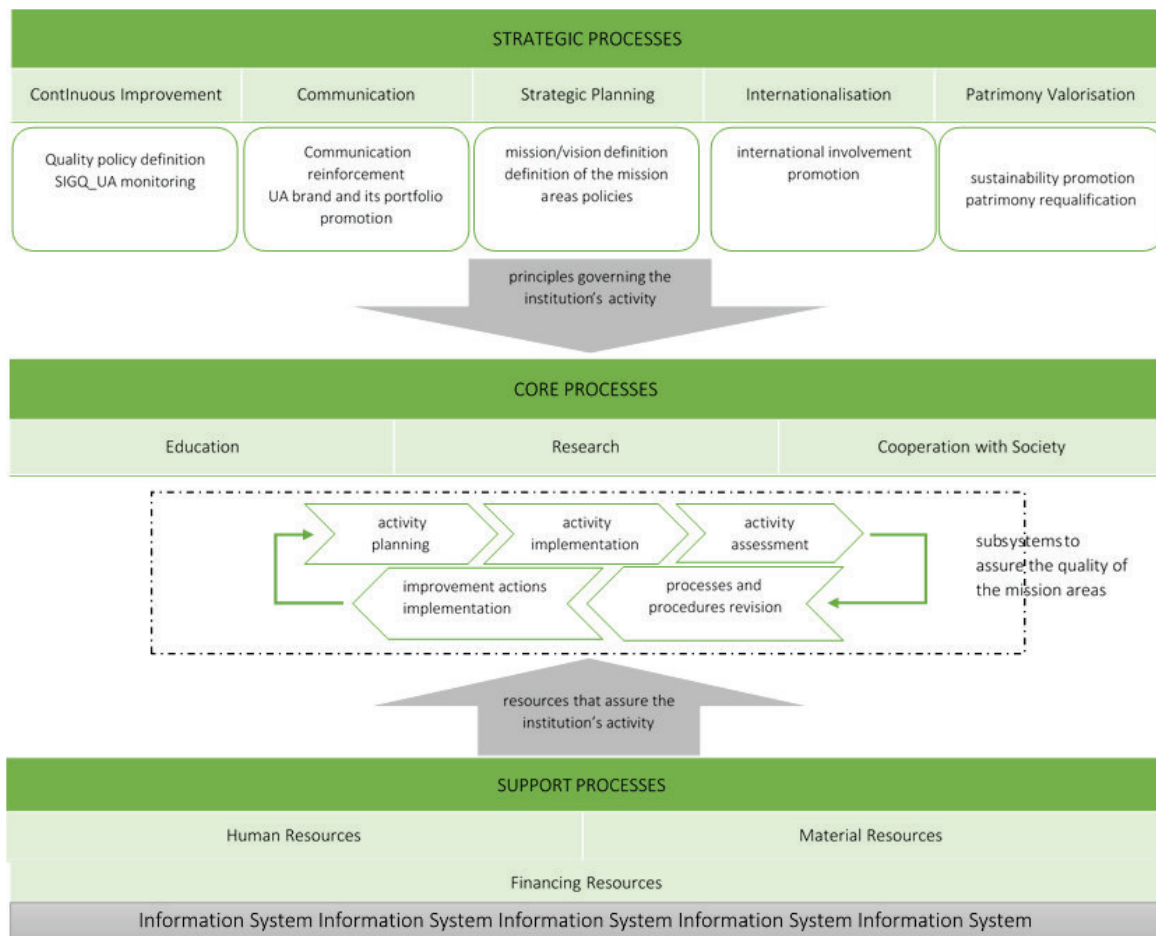


Figure 1. University of Aveiro's main processes

It is at the strategic level that the institution's guidelines are defined, and where the macro management and decision processes for each of the strategic vectors can be found: continuous enhancement, communication, strategic planning, internationalisation, and the value of heritage.

The core processes are those that take place in the institution's three mission areas, and include the mechanisms and procedures that permit a permanent evaluation and continuous enhancement of that activity: teaching, research and cooperation with society. Education is the area which is more widely developed, because it is the most complex from a processual and procedural point of view. In the other University's mission areas – Research and Cooperation with Society – the evaluation procedures enacted by the national institutions for the regulation of activities in the field of science are followed and incorporated into the SIGQ_UA, in the definition of institutional strategy.

The fact is that in all of the mission areas the results achieved have shown the effectiveness of the processes and procedures adopted, with the clear and positive evolution of the established performance parameters.

These results clearly show: i) the high participation and involvement of the academic agents in the various processes triggered by the institution, which, in their turn, derive from the perception that these actors have of the importance of what is being done: a) for the improvement of the teaching/learning process, especially concerning educational attainment; b) in the creation and impact of new knowledge; c) in the multiple ways of cooperation with society: economic appreciation of knowledge, technology transfer and service provision; ii) a perfectly consolidated Information System (SIUA), that makes the necessary information for decision-making available to the institution's main management bodies.

At the base are the support processes that assure the activities of UA with respect to human, material and financing resources, and particularly guarantee student support throughout their time in the institution. Here is also included the SIUA that supports the activities at the institution and allows the registration and production of the institutional information relevant to management and decision-making processes.

From the point of view of the actors and the structure that support the functioning of the SIGQ-UA, the UA opted not to create a parallel structure for this purpose, but to integrate the quality component in the institution's own activity. This means that the SIGQ-UA is run and managed within the existent decision-making bodies and services of the UA and that no specific bodies or units responsible for managing and running the system have been created (although tasks, responsibilities and resources of individuals and bodies have been defined). The UA believes that one of the important requirements for the efficiency of the QA policy is keeping the same simplification logic, both in the structure needed for the efficient operation of the SIGQ-UA and in the procedural protocol and dimension that is inherent to it, which characterises the organisational structure. The SIGQ-UA itself is subject to a process of continuous enhancement.

Learning and Teaching Quality Assurance at the University of Aveiro

As part of its institutional strategy, the UA is committed to the permanent consolidation of the quality of its educational offer, with special attention to the needs of society and of the job market, the processes of formal accreditation and the academic success and social well-being of its students. Besides the Vice-Rectors with responsibilities for educational matters, and the Doctoral School, which coordinates activities in the 3rd cycle, a Pro-Rector was nominated with specific competences for the evaluation and accreditation of study cycles.

The educational offer, comprising degree courses – licenciatura, integrated master, master and PhD – and non-degree courses – short 2-year professional courses, postgraduate specialisations and advanced training courses –, is created, monitored and revised following internal procedures and evaluated/accredited by the respective national agencies (A3ES and ANQEP). In the creation and revision of study cycles, the participation of internal and external stakeholders is guaranteed through the Scientific Council (SC), the Pedagogic Council (PC), the Council of Organic Unit (OUC), and the Self Evaluation Committee, and through consultation with external partners (e.g. businesses, local authorities, schools, HEIs). Indicators of attractiveness, student success and satisfaction, employability, the results of the Quality Assurance Subsystem_course (SubGQ_UC) and the Quality Assurance Subsystem_study cycle (SubGQ_curso), generated every semester, and the results of self-evaluation and of external evaluation/accreditation, occurring periodically, are used in these processes (monitoring, revising, creating and closing study cycles).

For each study cycle, objectives and employment opportunities, candidatures, ways of functioning, study plans, and other relevant information are defined and publicised, and each course is organized in accordance with learning objectives and workload, presented in ECTS. UA study plans include opportunities for electives, including free electives, internships, elaboration of projects, dissertations and theses in industry, depending on the type and level of study cycle. Students also have the opportunity to take two extra course units (UC) free of charge to broaden their education and promote the acquisition of social and personal skills. There is an Internship and Professional Office dedicated to the promotion of employability and integration in the job market.

Systematised information about the functioning of L&T is available through the SubGQ_UC (consolidated over eight years) and the SubGQ_curso and SubGQ_PD (recently implemented). Data

from the SubGQ_UC implementation has revealed a stable participation of students in responding to pedagogical questionnaires, improvement in their self-assessment and success in courses (Figures 2, 3 and 4).

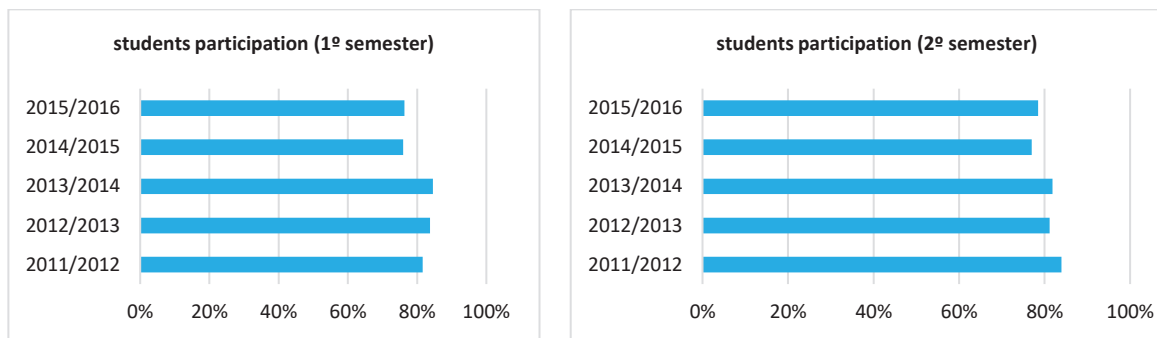


Figure 2. Students’ participation (%) in pedagogical questionnaires (SubGQ_UC) by academic year

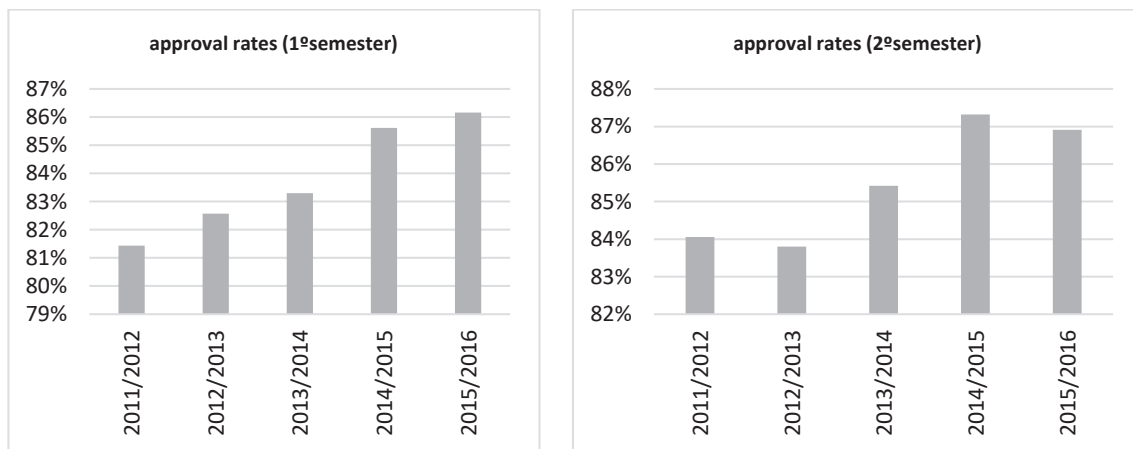


Figure 3. Students’ approval rates (approved/evaluated) by academic year

The results of the SubGQ_UC make it possible to identify relevant situations in the improvement stage, which generate mandatory improvement plans (PMO), with the obligation to indicate corrective measures adequate to the situation and respective resources attributed to its implementation. As a result of these mechanisms, a positive evolution has been noted regarding the

quality of teaching-learning, based on data which reveal, for example a decline relative to the number of courses with PMO.

Situations of Good Practice (BP) are also signalled by the system; BP is reinforced in several ways, namely through the dissemination of these practices in fora which aim to promote sharing of Good Practice, as is the case of Teaching Day, and the dissemination of interviews with teachers of courses signalled as BP.

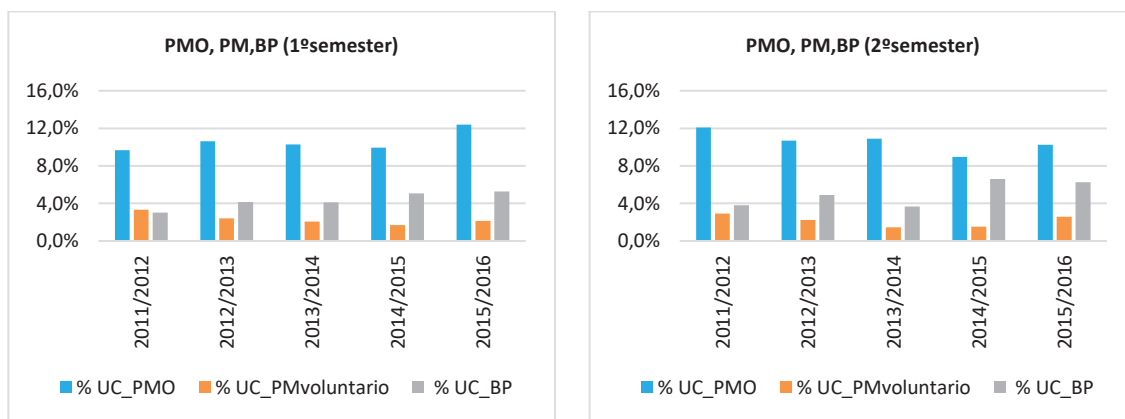


Figure 4. PMO, PM and BP evolution (%) by academic year

The SubGQ_curso makes it possible to have a view of the integrated data related to the study cycle from the SIGQ_UA and other PIs provided centrally, which support the elaboration of an annual report (by the study cycle coordinator) and permit the continuous monitoring and review of the study cycle.

The expansion of the SubGQ_UC and the SubGQ_curso to the 3rd has been implemented for the first time in a pilot phase, and is now in the process of being fully implemented. In the academic year 2016/17, the research components of all the 3rd cycles in the University have been assessed and monitored by students, supervisors, tutoring commissions (with external elements), doctoral programs' coordinators, department directors, the director of the Doctoral School, and the Pedagogic and the Scientific Councils. Areas under assessment included students' scientific work (namely in terms of their progress in the year under analysis), the supervision and the resources available.

As integrated mechanisms of monitoring and continuous enhancement of L&T, it is relevant to highlight the *Academic Cycle Monitoring Program (ACMP)*, the *Data Portal* and the *Academic Portal (PACO)*. The ACMP plans and regulates the functioning of the tasks of the academic cycle, in accordance with the UA study regulations (REUA), namely the definition and coordination of the types and moments of assessment, the schedules of the course file (DPUC) and the SubGQ_UC. The DPUC is a central instrument in the organization and the functioning of the course and the study cycle, and in the management of the academic life of the students.

The Data Portal provides essential strategic information for the management of the quality of the study cycles, providing data about the educational offer (attractiveness, employability), students (profile, performance, drop-out, graduation), and employability.

PACO allows students to manage their academic pathways (enrolments, histories, warnings) and the study cycle coordinator to monitor the situation of students on the courses and their progress through the study cycle. There are other mechanisms to support and accompany students, amongst them the Academic Management Services (SGA), the Pedagogical Office, the Social Services (SASUA), and, with the participation of the students, the Pedagogic Council, the study cycle commission, the students union (AAUAv), course level student bodies, and LUA, a help-line of and for students. Social action mechanisms are implemented, with special emphasis on the award of scholarships to the best entrants, special conditions of attendance for students with special needs, and scholarships for students with excellent sports results.

Also highlighted are a set of strategies implemented to promote integration, academic success and prevent dropout, with a special focus on the transition to higher education and during the first year of studies, namely: the Welcome Week, since 2002; the UA Tutoring Program, since 2011, and FICA, since 2015/16, an integrated program for the reception, guidance, and monitoring of students and support for teachers, oriented to the 1st year of studies. This program provides the study cycle coordinator, via the Data Portal, with monthly information about the students' progress, promoting the prevention of situations of failure/drop-out; it also provides the institution, the Council of Organic Unit and the study cycle coordinator, with information about the success, failure and drop-out rates, allowing the identification of concrete improvement measures.

The quality of teaching is regulated through the SubGQ_UC/_Curso, and the mandatory improvement plans are monitored by the study cycle coordinator and the director of organic unit,

and supervised centrally via Pedagogic Council. There are several teaching support mechanisms that aim to monitor and improve teaching practices, e.g. SPEAQ@UA (forum for exchange and discussion of good practice), English-language improvement courses (teachers), e-EXPECT: Active Pedagogical Strategies in Higher Education, and TeachingDay, an annual event for the promotion and dissemination of pedagogical innovation practices in UA (since 2012). In the pedagogical field, it is important to note the implementation of PBL in ESTGA (one of UA's polytechnic schools) and in DCM (the Department of Medical Sciences) and the tutorial program implemented in the 1st cycle degrees offered by ESTGA in close collaboration with the social and business fabric. The teaching activities, and its results, imported from the SubGQ_UC, as well as pedagogical publications, are taken into account in the evaluation of teachers (via PADUA – Teaching Staff Evaluation Platform).

With regard to student admission procedures, the principles of publicity, equality, free competition, objectivity and transparency are applied in the different access regimes, and there are internal rules and regulations for this purpose. There are also procedures for appeals and complaints, in particular those expressed in REUA and implemented through the SGA, the PC, the Student Ombudsperson, and the Vice-Rector with responsibility for the academic area. The crediting of certified training, professional experience and scientific or other training is ensured by the University of Aveiro Crediting Regulations. The degrees and diplomas issued by the institution are accompanied by the diploma supplement containing the information referred to in DL No. 42/2005, of February 22.

Overall, the basic QA areas existent to assure the quality of L&T at UA are depicted in Figure 5.



Figure 5. Basic areas of QA in L&T at the University of Aveiro (general scheme)

University of Aveiro Performance Data Management Model

The above-given characterization of the performance data management at the University of Aveiro allows setting up the lines for a more concrete description of the University performance data management model. Taking up the differentiation of the four L&T sub-areas of the SQELT project – *L&T environment; teaching competences; learning competences; learning outcomes and its assessment* – the scheme of the UA performance data management model can be depicted as in Figure 6. Then, for each L&T sub-area the (most commonly) used PIs in the University are identified.

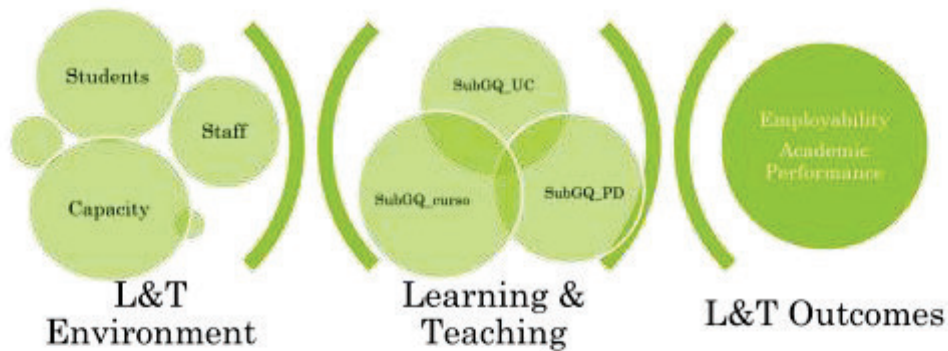


Figure 6. UA Performance Data Management Model in L&T (general scheme)

As for L&T, different PIs are calculated mainly under the SubGQ_UC (since the other subsystems are still in an early stage of implementation). The UA collects PIs of participation, process and results, as presented in Figure 7.

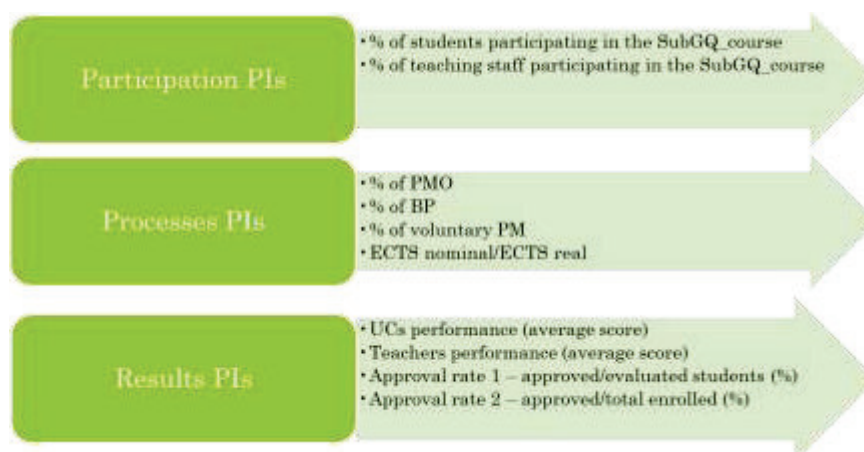


Figure 7. PIs for L&T – participation in the SubGQ_course, processes and results

Regarding L&T outcomes, the UA collects data and uses PIs on academic performance for the entire population. It also collects employability data and determines employability indexes through surveys to its graduates. Overall, the existent PIs are the ones presented in Figure 8.



Figure 8. PIs for L&T outcomes – academic performance and employability

L&T Environment is monitored through PIs designed for characterizing the student population, aspects of staff composition, and the HEI's facilities and teaching capacities. Student population indicators include access and enrolment in the study programmes, as well as characteristics of the actual students enrolled in them (Figure 9).

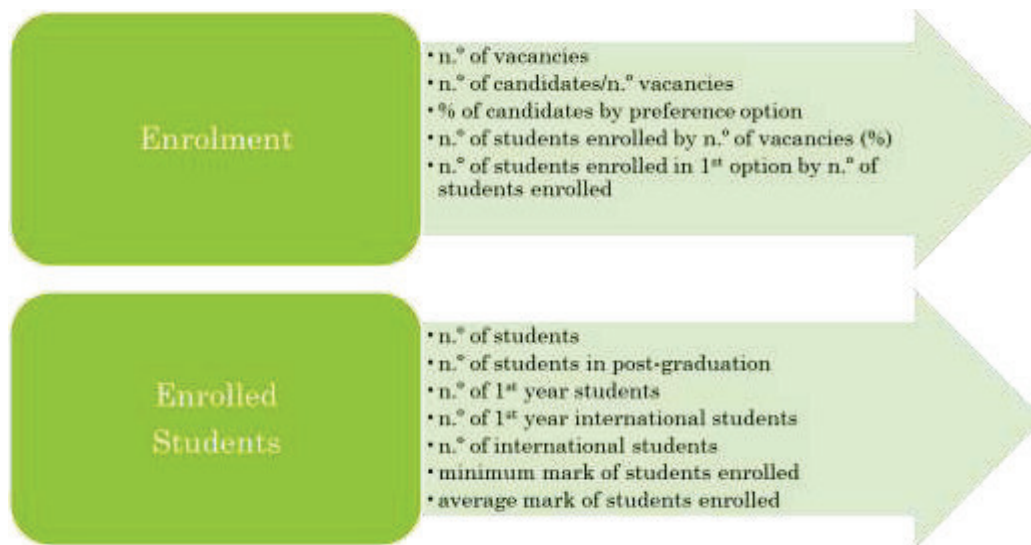


Figure 9. PIs for L&T Environment – access and enrolment and enrolled students

Staff monitoring is accomplished through PIs for academic and non-academic staff. These are presented in Figure 10.

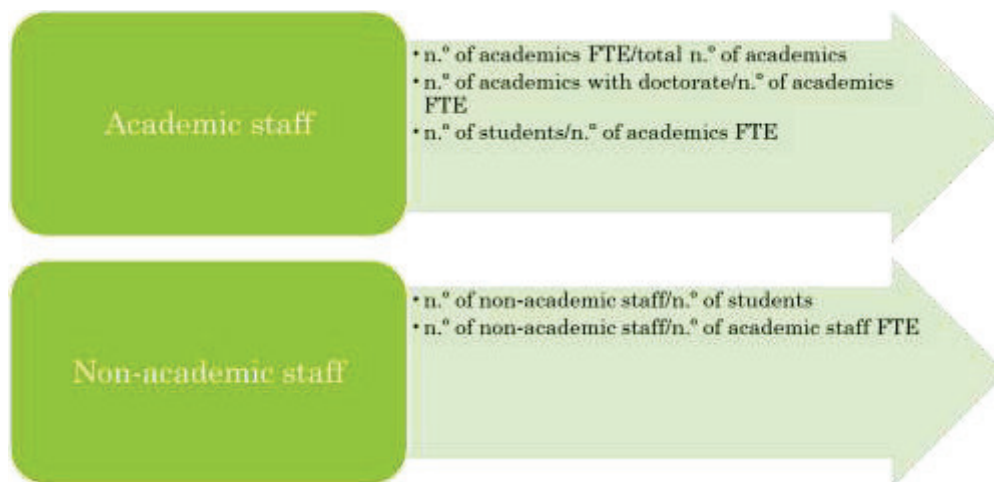


Figure 10. PIs for L&T Environment – academic staff and non-academic staff

Finally, the UA uses some PIs for capacity as presented in Figure 11.

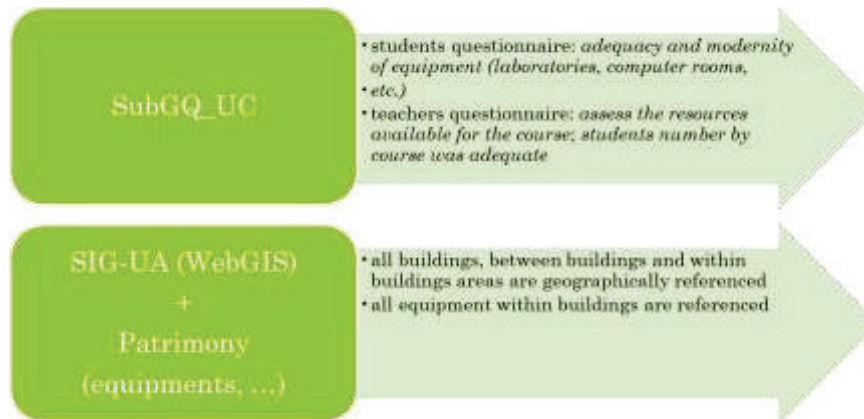


Figure 11. PIs for L&T Environment – capacity

In Annex 1, the full set of PIs for L&T existent at the University of Aveiro is presented, according to the templates provided by the SQELT coordination team.

University of Aveiro Performance Data Management Model – Strengths, Weaknesses, Opportunities and Threats

Strengths

- A consolidated QA sub-system for the course units (SubGQ_UC), which is recognised and appropriate for the institution;
- A consolidated Information System (SIUA), with a high level of maturity, capable of providing an adequate response to the demands of the L&T internal QA system;
- A Data Portal with essential information for the management and decision-making;
- An Information System developed using the skills and knowledge of the personnel at UA, which permits it to grow and adapt itself to the specificities of the institution.

Weaknesses

- Not all the data that could be relevant for L&T quality improvement is collected and/or treated;
- Some interesting PIs are not yet incorporated in the Data Portal;

- Some of the subsystems which constitute the UA Information System need to be reviewed in order to improve factors of usability, accessibility and the quality of information search;
- Some relevant data and PIs are still not available to the UA community at large.

Opportunities

- The institutional capacity to change (by adapting the information systems to current technological trends and greater involvement of users in the design and validation processes of the improvements to be implemented);
- Favourable climate for the consolidation of the internal QA system and the broadening of the procedures of performance analysis;
- The degree of maturity and consolidation of the SubGQ_UC which contributes to reinforce the actors' involvement;
- Participation in international rankings and research projects (e.g. SQELT).

Threats

- The monitoring of performance quality centred on multiple numerical data may lead to an excessive and not necessarily positive quantitative analysis regarding the measurement of L&T quality;
- The danger of not being able to adequately relate the PIs with the real functioning of the institution.

To conclude, one can say that the participation in the SQELT project may help overcome the threats identified regarding the UA performance data management model, while providing a relevant opportunity to engage in discussing and exchanging ideas on how to adequately assess, monitor, assure and improve L&T quality within HEIs. The UA team expects that the project outputs will contribute to the University's understanding of what different actors (e.g. teachers; students; institutional leadership; people involved and not involved in assuring the quality of L&T), from different countries and institutions, think about the importance of different types of data and PIs for L&T quality, as well as about their actual use in several institutions across Europe.

More specifically, one expects that by participating in the SQELT project the UA will gain knowledge and information relevant for the improvement of its performance data management model, namely regarding the following aspects:

- Identification of the most important data to be collected and PIs to be developed for adequately assuring and improving the quality of L&T;
- How to assure that the data collected (and the PIs defined based on it) is accurate, consistent and kept secure within the UA;
- How to decide on who in the institution should have access to the existent data and PIs and for what purposes;
- How to improve internal actors' capabilities to analyse and interpret the existent data and PIs so they can actually be used to support decision-making and contribute to quality improvement;
- How to implement an effective learning analytics system, able to understand and optimize learning in the University, as well as the environment in which it occurs.

References

ENQA et al. (2015) Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). Brussels: ENQA/ESU/EUA/EURASHE

Annex 1 – Template for performance indicators sets for comparative analysis of performance data management models (“Benchmarking Report”) of SQELT partners HEIs – The case of the University of Aveiro

Table 1. Performance types and PIs of L&T environment

Performance type	PI description SQELT framework	PI description our HEI	Governance utility	Interested stakeholder group(s)	Relation to profile/strategy	Data source	Required by politics/law	Notes
Quality of incoming students	Student entrance score	<ul style="list-style-type: none"> Student entrance score 	To characterise student population	- Ministry of Science, Technology and Higher Education - HEIs	Information required by the national access contest (CNA)	Ministry of Science, Technology and Higher Education (MCTES)	Yes	
	University entrance tests	-	-	-	-	-	No	Prerequisites for some degree courses
	Number of placed students; placed rate in the 1 st option and occupancy rate of vacancies (1 st phase CNA)	Number of placed students; registered and effective rate of registration (per phase CNA)	To characterise student population	Governance (rectorship, department directors, program directors, ...)	Information required by the rectorship	UA statistical data (Pis Portal)	No	-
Learning resources	Number of placed students; minimum and average classification of placed students (per phase CNA)	Number of placed students; registered and effective rate of registration (per phase CNA)	To dimension the literary estate	Governance (rectorship, department directors, program directors, ...)	Information required by the rectorship	UA Facts and Figures	No	-
	Number of book titles, periodical & website subscriptions held in library	<ul style="list-style-type: none"> Number of books in the library and number of on-line pieces 	-	-	-	-	-	All the book titles, periodicals and website subscriptions existent in the university are proposed by specialists from the different scientific areas of the university (teachers and researchers). The bibliographic references recommended in each UC are periodically updated.
	Expert assessment of quality of book titles, periodical & website subscriptions	<ul style="list-style-type: none"> Adequacy and modernity of the equipment (laboratories, computer rooms, etc.) 	To evaluate satisfaction degree of library users	- Rectorship - Library Services, Documentary Information and museology (SBIDM)	Information required by the rectorship – internal QA of L&T	Student pedagogic survey (SubGQ_UC)	By law HEIs need to implement internal QA systems, namely for L&T	-

Performance type	PI description SQELT framework	PI description our HEI	Governance utility	Interested stakeholder group(s)	Relation to profile/strategy	Data source	Required by politics/law	Notes
		<ul style="list-style-type: none"> Adequacy of the UA libraries network 			Information required by SBIDM	Annual online questionnaire to library users	No	-
	Course capacities and diversity (with respect to topics, class options, time, place, lecturers)							Information on this topic is available in different places and at different time (e.g. courses timetables; teaching duties distribution; moodle; programs; study programs structure)
Teaching resources	Ratio of students to teaching staff	<ul style="list-style-type: none"> Number of students (and FTE) Number of teaching staff (and FTE) 	To characterise the teaching capacity of the institution	Governance (rectorship, department directors); Agency for Assessment and Accreditation of Higher Education (A3ES)	Information required by the rectorship and A3ES	- UA Facts and Figures - Rankings	Programs accreditation (A3ES)	-
	Proportion of teaching staff with verified doctoral qualifications	<ul style="list-style-type: none"> % of teaching staff with a PHD 	To promote teaching staff qualification	Governance (rectorship, department directors...)	Information required by the rectorship and some rankings	- UA Facts and Figures - Rankings	Yes	-
Facilities & equipment	Provision of student places	<ul style="list-style-type: none"> Number of student places (per phase CNA) 	To define the educational offer of the institution	Governance (rectorship, department directors, degree course directors, ...)	Information managed between MCTES and HEI	UA statistical data (Pls Portal)	Yes	-
	Number of accessible computer terminals	<ul style="list-style-type: none"> Number of computers in the Campus 	To evaluate and satisfy the needs	- Rectorship - Services of Information and Communication Technologies (STIC)	Information required by a national magazine that collects data to inform the students	"Student Fórum"	No	--
	Teaching staff assessment of adequacy of facilities & equipment	<ul style="list-style-type: none"> Appropriate resources for the adequate functioning of the curricular unit (UC) 	To improve facilities & equipment	Governance (rectorship, department directors...)	Information required by the rectorship - Internal QA of L&T	Teaching staff report (SubGO_UC)		No
Financial management	Total operating expenditure for students (other than accommodation & student allowance)	<ul style="list-style-type: none"> Total operating expenditure for education 	For budgeting and budget execution	Governance (rectorship, department directors)	Information required to define and implement the institution's strategy	UA budget	No	--

Performance type	PI description SQELT framework	PI description our HEI	Governance utility	Interested stakeholder group(s)	Relation to profile/strategy	Data source	Required by politics/law	Notes
Student composition, student administration & support services	Proportion of total operating funds (other than accommodation & student allowance) allocated to provision of student services	<ul style="list-style-type: none"> Proportion of total operating funds for education allocated to provision of services to students 	For budgeting and budget execution	Governance (rectorship, department directors)	Information required to define and implement the institution's strategy	UA budget	No	--
	Social origin of students	<ul style="list-style-type: none"> Characterize the household 	To characterise student population	Governance (rectorship, department directors, degree course directors, ...)	Information required by MCTES and HEI	- RAIDES (national questionnaire promoted by MCTES) - University entrance questionnaire	Part of the information	--
	Student gender	<ul style="list-style-type: none"> Number of total students enrolled at the institution, in the programs and in the programs for the 1st time 	To characterise student population	Governance (rectorship, department directors, degree course directors, ...)	Information required by MCTES (RAIDES)	UA statistical data (Pls Portal)	Yes	--
	Percentage of full-time students	<ul style="list-style-type: none"> Students (FTE) 	To measure the number of full-time students	Governance (rectorship, department directors...)	Information required by the rectorship	UA statistical data (Pls Portal)	No	--
	Percentage of international students	<ul style="list-style-type: none"> Number of international students 	To foster internationalisation	Governance (rectorship, department directors...)	Information required by the rectorship	- Annual activity plan - UA statistical data (Pls Portal)	No	--
	Percentage of postgraduate students	<ul style="list-style-type: none"> Number of postgraduate students 	To promote postgraduate degree courses					
	Ratio of students to administrative staff	<ul style="list-style-type: none"> Number of students (and FTE) Number of teaching staff (and FTE) 	To characterise the non-teaching capacity of the institution	Governance (rectorship, department directors)	Information required by the rectorship	- UA Facts and Figures	No	--
	Student assessment of student services (e.g., health, housing, food & sport facilities)	<ul style="list-style-type: none"> Characterize the degree of satisfaction of students regarding the conditions of the services available 	To promote better services to the students	- Rectorship - Social Services (SAS)	Information required by the Social Services	Satisfaction survey students accommodated in university residences (biennial) Satisfaction survey users of food units (biennial)	No	--

Performance type	PI description SQELT framework	PI description our HEI	Governance utility	Interested stakeholder group(s)	Relation to profile/strategy	Data source	Required by politics/law	Notes
		<ul style="list-style-type: none"> (accommodation, food, scholarships, health, library and sports facilities) 				Survey on quality of service provided by the Group of Scholarships (biennial) Survey on quality of care in the University Health Center (biennial) Satisfaction survey users of the bookstore/shop (biennial) Satisfaction survey users of sports facilities (biennial)		
	Minority/equity student support							Social and economic support exists for groups of students such as refugees, students with special needs, students from the former colonies (e.g. East Timor), students with economic needs. The aim is to contribute to their integration in UA.
	Special access provision							The campus and its facilities are inclusive, addressing the needs of people with different types of deficiencies (e.g. wheel chairs; blind people). UA is considered to be an "inclusive Employer Entity"
Staff composition	Percentage of international teaching staff	<ul style="list-style-type: none"> Number of international staff (teachers, researchers and post-doc fellows) 	To foster internationalisation	Governance (rectorship, department directors...)	Information required by the rectorship and some rankings	- UA Facts and Figures - Rankings	No	--

Performance type	PI description SQELT framework	PI description our HEI	Governance utility	Interested stakeholder group(s)	Relation to profile/strategy	Data source	Required by politics/law	Notes
	Opportunities for students to find networks that meet their social, cultural, study interests							Several initiatives take place at UA which provide students with opportunities to find different networks: Welcome Week; UA Tutoring Program; FICA; Students Associations (for each study program); Sports; Cultural Activities; Free extra-curricular UCs Some initiatives addressed at secondary school students also contribute to this endeavour (e.g. UA Open Campus; UA Summer Academy; visits to schools)
Social context	Opportunities for students to contact teachers	<ul style="list-style-type: none"> Number of times the student looked for (a) teacher(s) outside of contact hours during the semester Degree of assiduousness in attending the Tutorial Sessions 	To understand the needs of students and adjust the contact hours if needed	Governance (rectorship, department directors, program directors, ...)	Information required by the rectorship - Internal QA of L&T	Student pedagogic survey (SubGQ_UC)	By law HEIs need to implement internal QA systems, namely for L&T	--
	Opportunities for linking to community/collaborating with business and industry	<ul style="list-style-type: none"> Number of international internships Number of curricular internships Number of extracurricular internships Number of internships in the polytechnic degree courses 	To promote the relationship between the institution and the region/community and to increase the possibility of employability among students	Governance (rectorship, department directors, program directors, ...)	Information required by the rectorship	UA Facts and Figures	No	--
Stakeholders' participation	Facilities & spaces for stakeholders participation in curriculum development							External stakeholders participate either in the creation of new programs or in their curricular review and monitoring

Performance type	PI description SQELT framework	PI description our HEI	Governance utility	Interested stakeholder group(s)	Relation to profile/strategy	Data source	Required by politics/law	Notes
	Facilities & spaces for stakeholders participation in decision-making bodies							External stakeholders participate in several governance bodies (General Council, Council for Cooperation with Society, Council of Departments, ...)

Table 2. Performance types and PIs of teaching

Performance type	PI description SQELT framework	PI description our HEI	Governance utility	Interested stakeholder group(s)	Relation to profile/ strategy	Data source	Required by politics/law	Notes
Quality of staff	Staff recruitment	-	-	-	-	-	-	- We do have activities, processes and procedures for the recruitment and hiring of personnel for every area of activity of the University - the Teaching Staff Performance Evaluation platform is the instrument par excellence for the evaluation of the teaching staff's qualifications and skills
Teaching staff workload	Teacher assessment of teaching workload	-	-	-	-	-	-	The teaching workload is legally defined (an interval of working hours exist) and decided in each year for each teacher. Under the Teaching Staff Performance Evaluation platform each teacher can define a profile, dividing its working time according to the institution mission areas (L&T, research, third mission and management), which implies a different teaching workload.
Competences in subject-matter & methodology	Student assessment of teachers' subject-matter competence	<ul style="list-style-type: none"> Mastery of syllabus contents Clarity of exposition 	To characterize some aspects of teaching process	<ul style="list-style-type: none"> Governance (rectorship, department directors) Teachers of the UC, Coordinator of the UC 	Information required by the rectorship - Internal QA of L&T	Student pedagogic survey (SubGQ_UC)	By law HEIs need to implement internal QA systems, namely for L&T	-
	Understandable teachers' explanations	<ul style="list-style-type: none"> Number of articles and other publications Number of citations per article Number of citations per researcher Full papers in proceedings of national and international scientific congresses 	To measure the research activity	<ul style="list-style-type: none"> Governance (rectorship, department directors, research units, ...) 	Information required by the rectorship	Annual activity plan	No	-
General education skills	Number of papers or reports presented at academic conferences during a certain period of time [tbd] per full time equivalent members of teaching staff	-	To measure the research activity	<ul style="list-style-type: none"> Governance (rectorship, department directors, research units, ...) -U-MULTIRANK 	Information required by U-MULTIRANK	Ranking	No	-
	Activity learning offers (e.g., problem-based learning; research-based learning)	-	-	-	-	-	-	We do have degree courses where the problem-based learning is applicable (ex. health degree courses...)

Course quality	Effectivity & adequacy of teachers' communication skills	-	-	-	-	-	-	-	We had difficulty in understanding the difference between this PI and the one "Understandable teacher's explanations", included in the previous set of PIs (Competence in subject-matter & methodology)
	Teachers' respect and interest for students	<ul style="list-style-type: none"> Relationship between teacher and students 	To characterize some aspects of teaching process	Governance (rectorship, department directors) Teacher of the UC, Coordinator of the UC, program Director	Information required by the rectorship - internal QA of L&T	Student pedagogic survey (SubGQ_UC)	-	By law HEIs need to implement internal QA systems, namely for L&T	
	Teachers' stimulation of student interests	<ul style="list-style-type: none"> Capacity to interest and motivate students in the UC Creation of a favourable climate for learning and the active participation of students 							
	Teachers' encouraging students' autonomous thinking and acting	<ul style="list-style-type: none"> Stimulating student autonomy 							
	Student assessment of course quality	<ul style="list-style-type: none"> Overall functioning of the UC 	To characterize some aspects of teaching process	Governance (rectorship, department directors) Teacher of the UC, Coordinator of the UC, degree course Director	Information required by the rectorship - internal QA of L&T	Student pedagogic survey (SubGQ_UC)	-	By law HEIs need to implement internal QA systems, namely for L&T	
	Student assessment of teaching quality	<ul style="list-style-type: none"> Overall assessment of teacher's performance 							
	Teacher assessment of teaching quality	<ul style="list-style-type: none"> Identify the strong and weak points of teaching performance 	To characterize some aspects of teaching process	Governance (rectorship, department directors)	Information required by the rectorship - internal QA of L&T	UC responsible teacher report (SubGQ_UC)	-	By law HEIs need to implement internal QA systems, namely for L&T	
	Clarity of course requirements	-	-	-	-	-	-	-	We do have a webpage with all the information for each degree course (objectives, curricular plan, duration, course director, department, ...)
	Teacher sensitivity to class level & progress	<ul style="list-style-type: none"> Students background regarding the requirements of the UC 	To characterize some aspects of teaching process	Teacher of the UC, Coordinator of the UC, degree course Director	Information required by the rectorship - internal QA of L&T	Teaching staff report (SubGQ_UC)	-	By law HEIs need to implement internal QA systems, namely for L&T	

Table 3. Performance types and PIs of learning

Performance type	PI description SQELT framework	PI description our HEI	Governance utility	Interested stakeholder group(s)	Relation to profile/ strategy	Data source	Required by politics /law	Notes
Student workload	Student assessment of student workload	<ul style="list-style-type: none"> Distribution of the average number of weekly hours by UC (excluding classes and exams period) N.º of hours of study during the exams period by UC 	<p>Computation of real ECTS and comparison with nominal ECTS for each UC.</p> <p>Adjustment of ECTS to the real students' workload</p>	<p>Governance (rectorship, department directors, program directors)</p> <p>Teachers</p>	Information required by the rectorship - Internal QA of L&T	Students pedagogic survey (SubGQ_UC)	By law HEIs need to implement internal QA systems, namely for L&T	--
Quality learning	Student assessment of learning experience quality	<ul style="list-style-type: none"> Students' motivation for the UC Students' degree of satisfaction with their performance in the UC Students' assessment of the regularity in the monitoring of the work of the course unit throughout the semester Degree of attendance to tutorial sessions N.º of times students contact teachers outside contact hours/classes during the semester 	<p>To understand how students see their own performance in relation to the UCs they attend. This information allows to better understand and contextualise their final grades</p>	<p>Governance (rectorship, department directors, program directors)</p> <p>Teachers</p>	Information required by the rectorship - Internal QA of L&T	Students Pedagogic survey (SubGQ_UC)	By law HEIs need to implement internal QA systems, namely for L&T	--
	Teacher knowledge of learning models	–	–	–	–	–	–	Teachers are aware of different learning models, but the university does not monitor their knowledge
Learning diversity	Student knowledge of learning models	–	–	–	–	–	–	The university does not monitor students' knowledge of learning models
	Student assessment of learning diversity	<ul style="list-style-type: none"> Students' assessment of the adequacy of the proposed activities (assignments, case studies) to the goals defined for the UC 	<p>To understand students' perceptions about the UCs' functioning, namely regarding the different activities proposed to them</p>	<p>Governance (rectorship, department directors, program directors)</p> <p>Teachers</p>	Information required by the rectorship - Internal QA of L&T	Students pedagogic survey (SubGQ_UC)	By law HEIs need to implement internal QA systems, namely for L&T	–

Table 4. Performance types and PIs of learning outcomes and their assessment

Performance type	PI description SQELT framework	PI description our HEI	Governance utility	Interested stakeholder group(s)	Relation to profile/strategy	Data source	Required by politics/law	Notes	
Student success rates	Proportion of students entering programs who successfully complete first year	<ul style="list-style-type: none"> N.º of 1st-year students with a success rate below 50% of the n.º of ECTS in which they are enrolled (only available for undergraduate students) 	Prevent dropouts among undergraduate 1 st year students	Governance (rectorship, department directors, program directors)	Information required by the rectorship - Internal QA of L&T	FICA program (Dropout prevention)	No	Under the FICA program, we have data for two groups of students: 1 st year plus 2 nd year that did not completed more than 50% ECTS in their 1 st year	
	Proportion of students entering undergraduate programs who complete those programs in specified time	<ul style="list-style-type: none"> Academic success index 1 (n.º of students finishing in N years) Academic success index 2 (n.º of students finishing in N+1 years) 	Monitor and improve students' academic performance	Governance (rectorship, department directors, program directors) A3ES	Information required by the rectorship - Internal QA of L&T + External QA	UA internal statistics	A3ES	-	
	Proportion of students entering postgraduate programs who complete those programs in specified time	<ul style="list-style-type: none"> Academic success index 1 (n.º of students finishing in N years) Academic success index 2 (n.º of students finishing in N+1 years) 	Monitor and improve students' academic performance	Governance (rectorship, department directors, program directors) A3ES	Information required by the rectorship - Internal QA of L&T + External QA	Information required by the rectorship - Internal QA of L&T + External QA	UA internal statistics	A3ES	-
	Other PIs	<ul style="list-style-type: none"> N.º of years to graduate (undergraduate and postgraduate) Average final programs grades N.º of graduates by program Percentage of students dropping out from program Percentage of students dropping out from university UCs approval rate 1 (approved/evaluated students) UCs approval rate 2 (approved/enrolled students) UCs performance (average score) Teachers performance (average score) 	Monitor and improve programs performance	Governance (rectorship, department directors, program directors)	Information required by the rectorship - Internal QA of L&T	Information required by the rectorship - Internal QA of L&T	UA internal statistics	No	-
			Monitor and improve L&T quality	Governance (rectorship, department directors, program directors) Teachers	Information required by the rectorship - Internal QA of L&T	UA internal statistics + Students pedagogic survey to students	By law HEIs need to implement internal QA systems, namely for L&T		

Student & alumni satisfaction	Alumni satisfaction (surveys)	<ul style="list-style-type: none"> If you could go back in time, would you choose again this program? If you could go back in time, would you choose again, this university? How far is your employment related to your field of graduation? How far did your program give you the competences you need in your actual employment? 	Monitor satisfaction with the program and the university	Governance (rectorship, department directors, program directors)	Information required by the rectorship - Observatory of the socio-professional path of the UA graduates	Survey on the employability of the university graduates	No	-
	Proportion of (under-) graduates who within a period of time [tbd] of graduation are employed	<ul style="list-style-type: none"> Percentage of graduates that got a job until one year after graduation (data for all undergraduate and graduate programs) 	Monitor and improve graduates employability	Governance (rectorship, department directors, A3ES)	Information required by the rectorship - Observatory of the socio-professional path of the UA graduates	Survey on the employability of the university graduates	A3ES	Survey conducted every three years
Employability	Proportion of (under-) graduates who within a period of time [tbd] of graduation are enrolled in further study	<ul style="list-style-type: none"> Percentage of graduates that enrol in further study immediately after finishing their programs 	Monitor and improve graduates enrolment in further study	Governance (rectorship, department directors, program directors)	Information required by the rectorship - Observatory of the socio-professional path of the UA graduates	Survey on the employability of the university graduates	No	Survey conducted every three years
	Other PIs	<ul style="list-style-type: none"> Percentage of graduates employed in activity sectors related to their programs Percentage of graduates employed in activity sectors not related to their programs Percentage of unemployed graduates 	Monitor and improve graduates employability	Governance (rectorship, department directors, A3ES)	Information required by the rectorship - Observatory of the socio-professional path of the UA graduates + External QA	Survey on the employability of the university graduates	A3ES	Survey conducted every three years
Achievability of high level L&T goals	Student assessment of L&T goals achievability	<ul style="list-style-type: none"> Development of students capacity to understand the UC themes 	Monitor and improve L&T quality	Governance (rectorship, department directors, Teachers)	Information required by the rectorship - Internal QA of L&T	Pedagogic survey to students	By law HEIs need to implement internal QA systems,	-

		Degree of achievement of the UC goals/program	Monitor and improve L&T quality	Governance (rectorship, department directors, program directors) Teachers	Information required by the rectorship - Internal QA of L&T	Pedagogic survey to students	namely for L&T	
	Teacher assessment of L&T goals achievability	<ul style="list-style-type: none"> • Degree of achievement of the UC goals/program 	–	–	–	–	–	–
Problem solving	Documentation of problem-based learning processes	–	–	–	–	–	–	Some programs use problem-based learning processes, documenting it. But no data is collected in a systematic manner.
	Observation of students performing a task	–	–	–	–	–	–	In the programs where problem-based learning processes are used, students are observed. But no data is collected in a systematic manner.
Research	Observation of students in application of scientific methods	–	–	–	–	–	–	Study programs are organised taking into consideration the promotion of a link to research. PhDs students and students with a scientific research initiation scholarship are the target groups for the application of scientific methods.
ICT	Observation of students using ICT	–	–	–	–	–	–	Actually all students entering the university have an adequate ICT competence level, so this observation does no longer takes place
Applied knowledge	Observation of students applying knowledge in practice (transdisciplinarity)	–	–	–	–	–	–	This observation occurs during the laboratorial and practical classes, where students put in practice their knowledge. Also during internships, that are quite common in several study programs
Personality (social & self-competences)	Fostering sustainability values (social, ecological, economical)	–	–	–	–	–	–	UA has adopted the concept of a sustainable campus and there is a mission group for sustainability. During the Welcome Week new students are sensitised for the relevance of promoting sustainability values. Then this sensitisation work is continued by the students associations of each study program

Assessment of learning outcomes	Grades	• Average final programs grades	Monitor and improve programs performance	Governance (rectorship, department directors, program directors)	Information required by the rectorship - Internal QA of L&T	UA internal statistics	No	–
	Student self-assessment of their knowledge		–	–	–	–	–	A questionnaire was conducted in 2017 about the competences graduates perceived as been acquired in the university. But the questionnaire is not planned to be conducted systematically
Assessment of assessments	Student assessment of assessment forms	• Adequacy of the evaluation methods	Monitor and improve L&T quality	Governance (rectorship, department directors), Teachers	Information required by the rectorship - Internal QA of L&T	Pedagogic survey to students	By law HEIs need to implement internal QA systems, namely for L&T	–
	Teacher assessment of assessment forms	• The evaluation method was adequate to the type of teaching and the objectives of the UC	Monitor and improve L&T quality	Governance (rectorship, department directors), Teachers	Information required by the rectorship - Internal QA of L&T	Teaching staff report	By law HEIs need to implement internal QA systems, namely for L&T	–