SQELT PROJECT

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

Intellectual Output O10:
REPORT ON VARIOUS STAKEHOLDERS' ASSESSMENT OF THE SQELT PERFORMANCE INDICATOR SET[1]

Project coordinator/Contact person:
Prof. Dr. Dr. Theodor Leiber
Sect. 3: Science Support, **evalag** (Evaluation Agency Baden-Wuerttemberg)
PO Box 120522, D-68056 Mannheim, Germany
Tel 0621-12854525, leiber@evalag.de
http://www.evalag.de/

Release 30 November 2020

---

[1] The title of Intellectual Output 10 has been changed from "Impact Analysis Report of the SQELT Project" (in the SQELT Application) to "Report on Various Stakeholders' Assessment of the SQELT Performance Indicator Set".

Table of Contents

Executive Summary

This Report on Various Stakeholders' Assessment of the SQELT Performance Indicator Set of learning and teaching (L&T) describes the application of an online questionnaire (see Appendix) including a characterisation of the underlying understanding of performance indicators (PIs), the selection criteria of the surveyed PI subset of the SQELT Comprehensive PI Set (SQELT-MIO, 2020), the survey sample and the analysis and interpretation of the survey responses.

The data analysis separately looks at PIs of the four L&T areas of 'Teaching competences and processes', 'Learning competences and processes', 'Learning outcome and learning gain and their assessment' and 'L&T environment'. In addition, the assessments of the involved stakeholder groups (students, teachers, quality managers, leadership) are analysed individually. Finally, a qualitative content analysis (QCA) of the respondents' full-text comments on the role of PIs is given.

Overall, the analysis of the responses to the applied survey about the assessed importance of a selection of PIs from the comprehensive SQELT PI set shows that a majority of selected PIs are considered important and very important by majorities of respondents. In this sense, the analysis can be read directly as a confirmation of the high importance of these PIs. These considerations apply to all four PI areas and to all stakeholder groups' assessments with only minor relative deviations.

In general terms, it can be claimed that the perceived importance of the assessed PIs belonging to both 'Teaching competences and processes' and 'Learning competences and processes' domains is higher compared to the other two L&T domains, the areas of 'Learning outcome and learning gain and their assessment' and 'L&T environment'. Among the four L&T domains, the PIs from the 'L&T environment' area seem to be perceived as the least important. At the same time, it is worth noting that for the 44 investigated PIs in the SQELT survey no median was below 3 (on the 5-point Likert scale 'completely unimportant', 'unimportant', 'important', 'very important' and 'extremely important'). This means that the subset of PIs selected for the survey represents items that are assessed at least 'important' by majorities of respondents.

As usual the full-text answers of the survey bring to the fore a broader spectrum of opinions among them positive attitudes towards PIs but also critical attitudes towards PI usage and even strong rejection. In particular, the latter exemplify exploratory issues and would require further and deeper analysis of the reasoning underlying the criticisms. An example is the claim that PI usage implies "managerialism" and "instrumentalism" and thus damages the culture of higher education.

Finally, it should be noted that the used survey questionnaire could only address 44 of more than 800 PIs of the SQELT comprehensive Performance Indicator Set. For different choices of subsets from the comprehensive PI set different responses may result.

Introductory Remarks

The SQELT survey questionnaire presented in the Appendix was applied online for gathering evaluative information about the SQELT Comprehensive Performance Indicator (PI) Set on learning and teaching (L&T) in higher education that can be found at (SQELT-MIO, 2020). Since this PI set contains more than 800 performance indicators (PIs), for the online survey a relatively small number of PIs had to be selected to keep the survey manageable. Furthermore, following the differentiation of PIs in the full comprehensive PI set the PIs used in the online survey were also grouped into the four areas of "Teaching Competences and Processes", "Learning Competences and Processes", "Learning Outcomes and Learning Gain and their Assessment" and "L&T Environment".

The following involved stakeholder groups were approached by the online survey

- **Teachers**, **QM members**, **leadership** and **students** from the **SQELT partnership universities** (University of Aveiro, Birmingham City University, Ghent University, Jagiellonian University Kraków, Danube University Krems, University of Milan) and some **other national universities** as well

- **QM units of German Universities and Universities of Applied Sciences**

- **Quality assurance agencies** from the EHEA (ENQA and EQAR members) and worldwide (INQAAHE members)

- **European higher education networks** (ENQA, EURASHE, ESU, EUA)

- **External participants of the Euro Region Workshops** that were held online in Austria, Germany, Italy, Poland, Portugal, and the United Kingdom.

The online survey was established with the software LimeSurvey.

The Survey on the SQELT Performance Indicator Set and the Survey Sample

A Glimpse on the Conceptual Understanding of Performance Indicators

An uncontested, widely agreed definition of the term "performance indicator" in higher education L&T is currently not available.

Ideally, as the name says, a PI gives an indication of some performance (or performance pre-condition) of an individual or an organisation or an organisational unit, for example, in the context or framework of a project, programme, product or other initiative. Typically, a PI is related to points of reference such as standards and goals against which the measured value of the PI and thus the achieved degree of performance or success is assessed.

Depending on the complexity of the activity, project, programme or organisation under scrutiny, the performances to be looked at can be very different and therefore PIs can cover a wide range of measures of different complexity: from pure performance figures (numerical values; quantitative PIs) to complex qualitative performance information, which is based on the measurement and collection of qualitative information (qualitative PIs) that may originate from all sorts of satisfaction and expert surveys as well as interviews and document analysis.

Against this backdrop, it is assumed that PIs can be used to monitor aspects of performance and performance capacity for comparative purposes, to facilitate the assessment of institutional operations, and to provide evidence for quality assurance and improvement and organisational decision-making. In this sense, PIs 'represent qualitative and quantitative information and data, which indicate functional qualities ("performance") of institutional, organisational or individual performance providers.' Thus, 'performance indicators provide information about the degree to which quality performance objectives are being met' (Leiber, 2019a, 77).

To round up these basic considerations in a more concrete way, here are two examples of PIs in higher education L&T:

Quantitative PI: Number of student workplaces held in a university's facilities in relation to the student population of the university and/or per subject field and/or per study programme.

Qualitative PI: Learning gain in reflective competences including cognitive higher education for sustainable development (HESD) competences according to relevant quality criteria to be identified, e.g. systemic thinking, forward thinking, critical thinking, self-perception competence. (Inherent to any complex qualitative PI is the choice of assessment methodology, among them (satisfaction) surveys of students, surveys of teaching staff, assessment reports by experts/peers (other than students and teaching staff)).

More about the understanding of PIs (within the SQELT Strategic Partnership and project) can be found in the SQELT Comprehensive Performance Indicator Set (cf. SQELT-MIO, 2020), a recent publication on the issue (Leiber, 2019a) and a Special Issue of *Quality in Higher Education* that will appear in 2021 (Barbato et al., 2021; Beerkens, 2021; Bruckmann et al., 2021; Huisman & Stensaker, 2021; Leiber, 2021; Pohlenz, 2021; Sarrico, 2021).

Selection Criteria of the Surveyed Performance Indicator Subset

As already mentioned above, the SQELT Comprehensive Performance Indicator Set on L&T in higher education (SQELT-MIO, 2020) contains more than 800 PIs. Therefore, it is unfeasible to evaluate this complete set in a single survey and a selection had to be made for implementing an online survey on such sub-set of PIs to keep the survey manageable.

To select the surveyed PI sub-set from the SQELT Comprehensive PI Set the following selection criteria of PIs were used:

- Student-centredness and shift from teaching to learning

- Study success, student learning gain and student learning experience

- Supportive of reflected Learning Analytics

- Main goals of higher education (subject knowledge, methodological knowledge, employability, personality development, social competences)

Under these conditions those PIs were chosen that were conceived as most important by the SQELT project group and allowed the survey to be answered within 20-30 minutes. This procedure ended up with a total of 44 PIs in the survey that is presented in the Appendix.

The Survey Sample

The survey access was distributed by an open link accessible to all; no individual survey access codes were used; no reminders for survey participation were sent out. Therefore, in a strict sense a response rate cannot be calculated. Instead, one can only have a rough estimate for a substitute response rate by comparing the number of approached respondent addresses and the number of respondents.

Approximately, the number of addressed possible respondents was ca. 540. The survey received 258 responses in total, among them 117 complete responses and 141 incomplete responses. In LimeSurvey "incomplete response/answer" implies that the participant did not get to the end page and clicked on Submit (the questionnaire does not have a regular completion date). This means that usually certain answers from this participant are missing in the data set. Sometimes it may happen that only the last Submit click is missing.

Out of the 141 "incomplete" responses between 100 and 120 participants did not respond to most of the survey items. Therefore, only those questionnaires that were regularly completed (named "complete answers" in LimeSurvey) are considered in the analysis that is presented in the next Section. In this sense, the substitute response rate of the survey is 117/540 = 21,7 %.

Table 1 shows the list of types of the respondents' organisations (left column) that were approached by the survey. The further columns show the numbers of addressed respondents at these organisations, the total number of responses from these organisations, the total number of all responses (complete and incomplete) and the number of complete responses (117) and responses per stakeholder group (right column).

Table 1: Characteristics of the SQELT survey sample: respondents' organisations, addressed respondents and number of responses

Type of respondents' organisation	Number of addressed respondents	Total number of responses	Total number of responses	Total number of complete responses and responses per stakeholder group
University	Ca. 280	106	258	117
University of Applied Sciences	75			Thereof (multiple answers possible):
QA agency (EHEA and worldwide)	170	32		Students: 8 Teachers: 45
European Higher Education Network	4	2		Leadership: 16 Internal QM: 29 External QM: 26
Individual respondent	11	No information available		European HE Network: 1 HE politics: 1
No information available	–	114		Other: 1

Table 2 shows the list of countries where the respondents came from and the respective number of respondents for each of these countries. The data exhibit that the SQELT university partners' countries are most strongly represented with Portugal leading (38) and Poland having the smallest number of respondents (8) in this group.

Table 2: Characteristics of the SQELT survey sample: total number of (complete and incomplete) responses per country

Country	Number of responses per country	Country	Number of responses per country
Austria	13	Netherlands	2
Belgium	16	New Zealand	1
Bhutan	2	Norway	2
Czech Republic	1	Poland	8
Denmark	2	Portugal	34
Georgia	1	Republic of Moldova	1
Germany	15	Spain	5
Hungary	2	Sweden	1
Italy	21	Turkey	2
Kosovo	1	Ukraine	1
Macedonia	1	United Kingdom	10
Namibia	2	Country not mentioned	114

Against the background of these data characterising the survey sample it is obvious that the survey results cannot be claimed to be (statistically) representative with respect to any of its sample features such as European higher education institutions, the various stakeholder groups, the various countries of the respondents etc. Instead, the survey results are to be understood as case study-specific but nevertheless qualitatively informative. In this sense the survey responses can give some hints and indications of the understanding of PIs in L&T among the respondents who belong to the stakeholder groups mentioned in Table 1 (right column).

# Analysis and Interpretation of Survey Results

Performance Indicators of Teaching Competences and Processes

The SQELT survey questionnaire contained ten performance indicators (PIs) selected from among a larger number pertaining to the "Teaching Competences and Processes" dimension of the SQELT PI set (SQELT-MIO, 2020). Respondents were asked about these ten PIs' degree of importance for the quality management of learning and teaching (L&T) in higher education (from extremely important to completely unimportant, 5-point Likert scale – see Appendix, Section B). Table 3 presents the descriptive statistics for each one of the ten PIs, while Figure 1 presents a graphical overview of the PIs' importance average.

Table 3: Descriptive statistics for respondents' answers to the importance of ten PIs related to Teaching Competences and Processes: distribution of the answers (%), median, mean, and standard deviation

	Completely unimportant	Unimportant	Important	Very important	Extremely important	Median	Mean	SD
TEACHING STAFF WORKLOAD (e.g. official commitment of teaching hours per semester week, number of teaching hours per semester week, number of courses)	0.9	3.6	24.5	**44.5**	26.4	4.0	3.92	0.86
PROPORTION OF TEACHING STAFF WHO PARTICIPATED IN PEDAGOGICAL TRAINING	2.7	5.4	25.2	**48.6**	18.0	4.0	3.74	0.91
QUALITY OF RECRUITMENT PROCEDURES FOR LECTURERS/ASSOCIATE PROFESSORS/FULL PROFESSORS (e.g. procedural responsibilities; recruitment and selection process; recruitment quality criteria)	1.8	5.4	18.0	**37.8**	**36.9**	4.0	4.03	0.97
NUMBER and/or PERCENTAGE OF REFEREED PUBLICATIONS during a certain time period (e.g. three years) per FTE (full-time-equivalent) member of teaching staff and/or per subject field and/or per study programme	5.4	17.0	**41.1**	26.8	9.8	3.0	3.19	1.01
TEACHING STAFF'S DIDACTICS COMPETENCES and PEDAGOGICAL KNOWLEDGE and SKILLS	0.9	0.9	10.1	40.4	**47.7**	4.0	4.33	0.77
TEACHING STAFF'S FEEDBACK TO STUDENTS (e.g. on work in progress, tests, completed assignments)	0.9	15.5	**40.9**	**42.7**	0.9	4.0	4.25	0.75
QUALITY OF TEACHING COURSES (e.g. embedding of courses in curriculum, meaningful course structures, options for participation, imparting knowledge and skills, preparedness of teacher)	0.0	0.0	9.1	31.8	**59.1**	5.0	4.50	0.66
NUMBER and/or PERCENTAGE OF PHASES OF PRACTICAL EXPERIENCE PER BACHELOR PROGRAMME (e.g. work experience, internships, external projects)	0.9	10.2	**41.7**	31.5	15.7	3.0	3.51	0.91
NUMBER and/or PERCENTAGE OF PHASES OF PRACTICAL EXPERIENCE PER MASTER PROGRAMME (e.g. work experience, internships, external projects)	0,9	6.5	34.3	**41.7**	16.7	4.0	3.67	0.86
NUMBER and/or PERCENTAGE OF PHASES OF PRACTICAL EXPERIENCE PER DOCTORAL/PhD PROGRAMME (e.g. work experience, internships, external projects)	1.0	13.3	**39.0**	34.3	12.4	3.0	3.44	0.91

Figure 1: PIs for Teaching Competences and Processes by average degree of importance
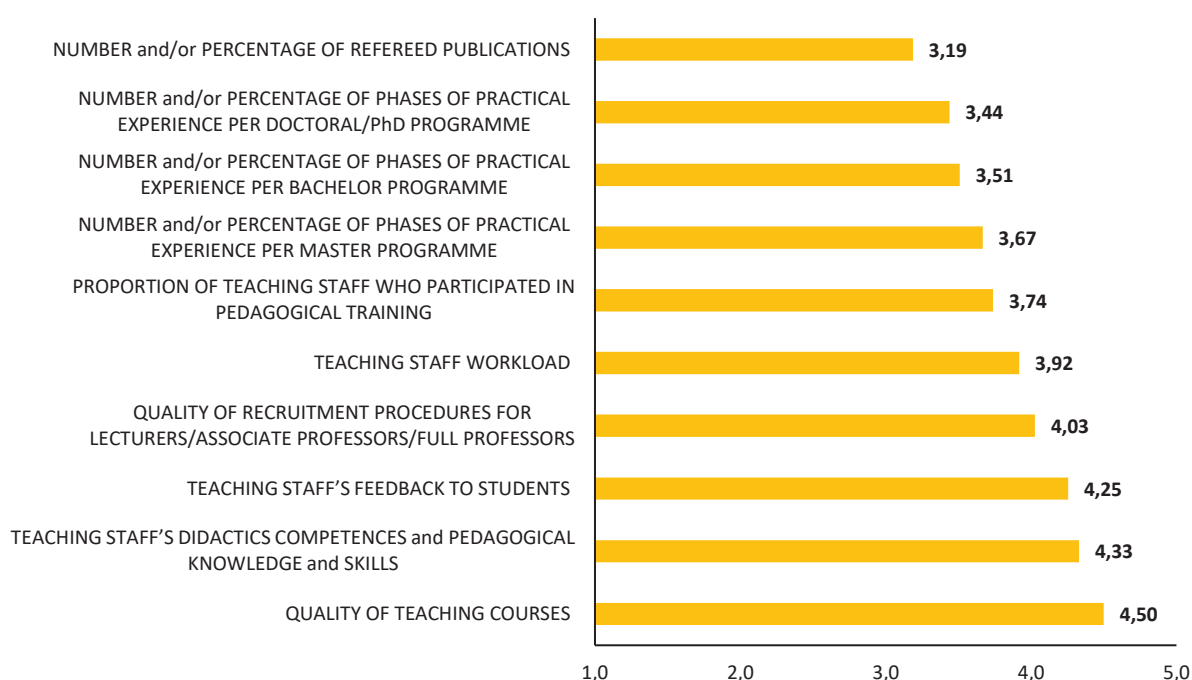
The survey results point to a distinct accordance around the importance of the ten PIs for the area of Teaching Competences and Processes: they are all classified, on average, at least as important. Nonetheless, some PIs are assessed as more important than others. Indeed, while one of them is on average considered as extremely important – 'Quality of Teaching Courses' (median of 5.0) – others are considered on average as being only important – 'Number and/or Percentage of Refereed Publications'; 'Number and/or Percentage of Phases of Practical Experience per Doctoral/PhD Programme'; 'Number and/or Percentage of Phases of Practical Experience per Bachelor Programme' (medians of 3.0). These results are interesting to the extent that they tend to point to the idea that the research performance of the teaching staff is not considered as a very relevant factor for assuring the quality of L&T (it is the PI where there was a higher percentage of respondents considering it as completely unimportant or at least unimportant). The same is true regarding the existence of practical experiences in Bachelor or doctoral programmes and, though to a less extent, also in Master programmes. What are indeed very important PIs for managing the quality of L&T are the quality of the teaching courses, the teaching staff's competences and skills and teaching staff's feedback to students. A further PI also considered as very important is the quality of recruitment procedures that should guarantee that teaching staff has the necessary competences and skills.

Performance Indicators of Learning Competences and Processes

Another area of the SQELT PI set concerns "Learning Competences and Processes" (SQELT-MIO, 2020). From the set of PIs included in this area, five were selected for the SQELT survey questionnaire. Again, respondents were asked about these five PIs' degree of importance for the quality management of L&T in higher education (from extremely important to completely unimportant, 5-point Likert scale – see Appendix, Section C). Table 4 presents the descriptive statistics for each one of these five PIs, while Figure 2 presents a graphical overview of the PIs' importance average.

Table 4: Descriptive statistics for respondents' answers to the importance of five PIs related to Learning Competences and Processes: distribution of the answers (%), median, mean, and standard deviation

	Completely unimportant	Unimportant	Important	Very important	Extremely important	Median	Mean	SD
STUDENT WORKLOAD (e.g. number of learning hours per semester week, number of courses)	0.0	2.7	25.9	**42.0**	29.5	4.0	3.98	0.82
AVERAGE DURATION PER STUDENT INTERACTION WITH COURSE ACTIVITIES (e.g. solution of exercises, watching videos, listening to lecture, participation in working groups, etc.)	0.0	9.8	**33.9**	29.5	26.8	4.0	3.73	0.97
STUDENTS' DISPOSITIONS, VALUES AND ATTITUDES TOWARDS LEARNING (measured on the basis of learner data and pedagogical descriptors, e.g. learning-related emotions such as enjoyment, curiosity, frustration, anxiety; ability in deactivating negative learning emotions; learning strategies)	0.9	8.2	23.6	**38.2**	29.1	4.0	3.86	0.96
STUDENTS' COMPETENCES WITH RESPECT TO LEARNING and SELF-DIRECTED LEARNING (SDL) (e.g. students' knowledge and understanding of learning theories, own learning processes, problem-based learning, research-based learning, internships, online learning, mobile learning, blended learning)	1.8	5.4	20.7	**34.2**	**37.8**	4.0	4.01	0.99
OVERALL QUALITY OF STUDENT LEARNING EXPERIENCE	0.0	0.0	16.1	34.8	**49.1**	4.0	4.33	0.74

Figure 2: PIs for Learning Competences and Processes by average degree of importance
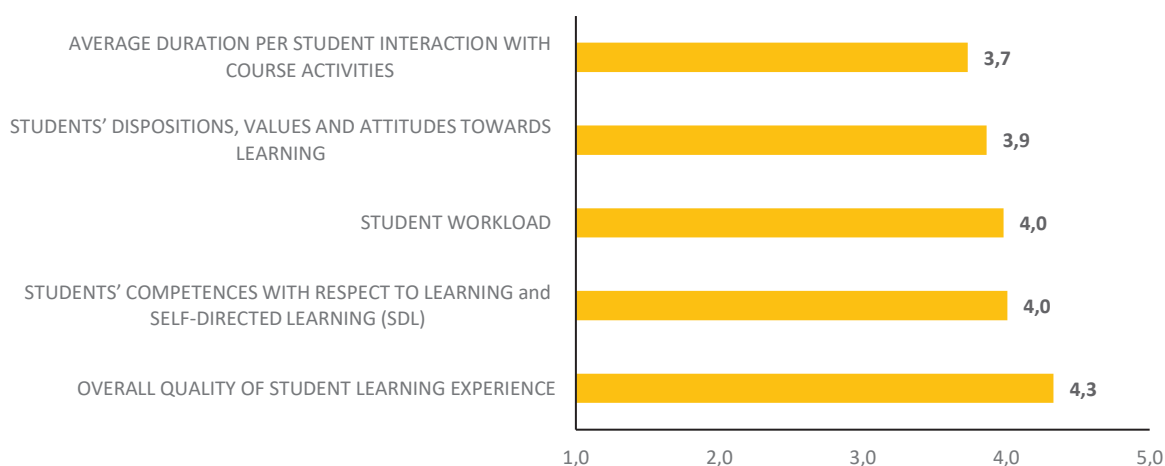
Again, the survey results, considering the answers of all respondents, point to a distinct accordance around the importance of the five PIs for the area of Learning Competences and Processes, with all of them collecting medians of 4.0, corresponding to their classification as very important PIs. However, it is nevertheless possible to detect some differences between the PIs' degree of importance. Indeed, it is worth referring that the PI 'Overall Quality of Student Learning Experience' is the one considered as having the highest degree of importance by the respondents (average score of 4.3; this is also the PI for which the variance in the responses obtained was lower). On the other hand, the 'Average Duration per Student Interaction with Course Activities' collects the lowest degree of importance (on average 3.7).

Performance Indicators of Learning Outcomes and Learning Gain and Their Assessment

Participants were asked to rate the importance of 22 PIs of the performance area of Learning Outcomes and Learning Gain and their Assessment (see Appendix, Section D). Table 5 presents the descriptive statistics for each one of these 22 PIs, while Figure 3 presents a graphical overview of the importance average of the ten PIs out of the 22 that were assessed as most important.

The majority of respondents regarded these PIs as important or very important. The PIs 'Students' learning gain in reflective competences' and 'Students' learning gain in learning strategies and self-learning competences' were rated as extremely important by most respondents. A range of other indicators were generally considered as very important, including student attrition and employment following graduation.

The lowest scoring indicator was the 'Percentage of credit points awarded in service-learning activities', with 26.6% of respondents rating it as unimportant and 3.7% as completely unimportant. Other items that were regarded as less important were PIs relating to numbers of students who had not completed within due time, the number of students who did not complete their first year and the number of students undertaking an internship.

Overall, responses indicate that there is a strong unanimity that PIs that relate to the students' learning gain and assessment relating to their own reflection and development are most important but that PIs relating to the students' longer-term outcomes (especially relating to employment) are assessed to be less important. Core to the student learning experience, according to respondents, is the learning gain in reflective competences and learning strategies and self-learning competences.
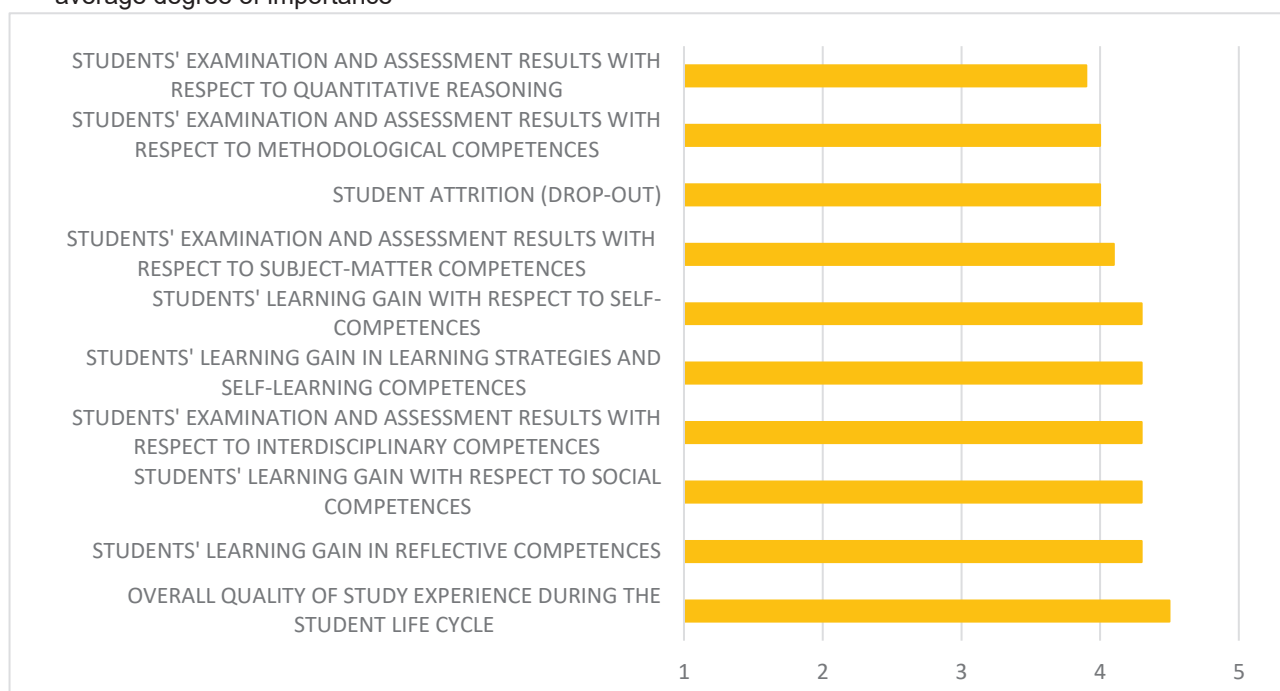
Table 5: Descriptive statistics for respondents' answers to the importance of 22 PIs related to Learning Outcomes and Learning Gain and Their Assessment: distribution of the answers (%), median, mean

	Completely unimportant	Unimportant	Important	Very important	Extremely important	Median	Mean
PERCENTAGE OF CREDIT POINTS AWARDED IN SERVICE-LEARNING ACTIVITIES	3,7	26,6	41,3	23,9	4,6	3	2,99
NUMBER and/or PERCENTAGE OF STUDENTS WHO DID NOT COMPLETE THE FIRST YEAR OF STUDY	1,7	8,7	36,5	27,8	25,2	3	3,86
NUMBER and/or PERCENTAGE OF STUDENTS WHO DID NOT COMPLETE THE UNDERGRADUATE PROGRAMMES WITHIN THE PLANNED PROGRAMME DURATION (Bachelor graduation on time)	2,6	7,8	39,7	33,6	16,4	3	3,76
NUMBER and/or PERCENTAGE OF STUDENTS WHO DID NOT COMPLETE THE GRADUATE PROGRAMMES WITHIN THE PLANNED PROGRAMME DURATION (Master graduation on time)	2,6	11,4	33,3	36,8	15,8	4	3,68
STUDENT ATTRITION (DROP-OUT) (per year per higher education institution and/or per subject field and/or per department/institute and/or per study programme)	0,0	8,7	25,2	40,9	25,2	4	4,04
NUMBER and/or PERCENTAGE OF BACHELOR STUDENTS PERFORMING AN INTERNSHIP (per higher education institution and/or per subject field and/or department/institute and/or study programme)	2,6	16,7	44,7	25,4	10,5	3	3,39
NUMBER and/or PERCENTAGE OF BACHELOR GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION ARE UNEMPLOYED (per higher education institution and/or per subject field and/or department/institute and/or study programme)	3,5	13,2	30,7	36,0	16,7	4	3,65

Table 5: continued

	Completely unimportant	Unimportant	Important	Very important	Extremely important	Median	Mean
NUMBER and/or PERCENTAGE OF BACHELOR GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION (e.g. six months and/or one year) ARE INVOLUNTARILY EMPLOYED IN AN OCCUPATION WITH A QUALIFICATION FRAMEWORKS LEVEL BELOW THE ATTAINED LEVEL (per higher education institution and/or per subject field and/or department/institute and/or study programme)	3,5	13,3	35,4	38,1	9,7	4	3,50
NUMBER and/or PERCENTAGE OF MASTER GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION ARE UNEMPLOYED (per higher education institution and/or per subject field and/or department/institute and/or study programme)	3,6	4,5	36,6	35,7	19,6	3	3,73
NUMBER and/or PERCENTAGE OF MASTER GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION ARE INVOLUNTARILY EMPLOYED IN AN OCCUPATION WITH A QUALIFICATION FRAMEWORKS LEVEL BELOW THE ATTAINED LEVEL (per higher education institution and/or per subject field and/or department/institute and/or study programme)	3,6	9,8	34,8	39,3	12,5	4	3,57
NUMBER and/or PERCENTAGE OF DOCTORAL/PhD GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION (e.g. six months and/or one year) ARE UMEMPLOYED (per higher education institution and/or per subject field and/or department/institute and/or study programme)	4,5	10,0	34,5	32,7	18,2	3	3,53
NUMBER and/or PERCENTAGE OF DOCTORAL/PhD GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION (e.g. six months and/or one year) ARE INVOLUNTARILY EMPLOYED IN AN OCCUPATION WITH A QUALIFICATION FRAMEWORKS LEVEL BELOW THE ATTAINED LEVEL (per higher education institution and/or per subject field and/or department/institute and/or study programme)	4,6	12,8	35,8	37,6	9,2	4	3,34
STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO SUBJECT-MATTER COMPETENCES	0,9	3,5	25,2	49,6	20,9	4	4,07
STUDENTS' LEARNING GAIN IN HIGHER EDUCATION FOR SUSTAINABILITY DEVELOPMENT (HESD) COMPETENCES	1,8	11,7	32,4	36,9	17,1	4	3,62
STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO METHODOLOGICAL COMPETENCES	0,0	4,4	24,8	50,4	20,4	4	4,01
STUDENTS' LEARNING GAIN IN REFLECTIVE COMPETENCES	0,0	2,7	18,6	38,1	40,7	5	4,32
STUDENTS' LEARNING GAIN IN LEARNING STRATEGIES AND SELF-LEARNING COMPETENCES	0,0	3,5	22,8	36,0	37,7	5	4,27
STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO QUANTITATIVE REASONING	0,0	7,0	34,8	41,7	16,5	4	3,88
STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO INTERDISCIPLINARY COMPETENCES	0,0	2,6	19,3	43,0	35,1	4	4,29
STUDENTS' LEARNING GAIN WITH RESPECT TO SOCIAL COMPETENCES	0,0	1,7	22,6	40,0	35,7	4	4,32
STUDENTS' LEARNING GAIN WITH RESPECT TO SELF-COMPETENCES	0,0	2,6	24,3	39,1	33,9	4	4,27
OVERALL QUALITY OF STUDY EXPERIENCE DURING THE STUDENT LIFE CYCLE	0,0	2,6	8,7	46,1	42,6	4	4,52

Figure 3: The ten most important PIs for Learning Outcomes and Learning Gain and Their Assessment by average degree of importance

Performance Indicators of Learning and Teaching Environment

Participants were asked to rate the importance of seven PIs of the performance area of L&T Environment (see Appendix, Section E). Table 6 presents the descriptive statistics for each one of these seven PIs, while Figure 4 presents a graphical overview of the PIs' importance average.

The majority of respondents regarded all these PIs as important or very important. Student interactions with teaching staff were regarded as the most important PIs in this area. The PI 'Number and duration of student interactions with teaching staff in the classroom' was regarded as the most important.

The PI 'Students' entrance grades (per study programme)' was regarded as least important with 20.4% of respondents regarding it as unimportant. However, well over half of respondents (65.5%) still regarded it as important or very important.

Table 6: Descriptive statistics for respondents' answers to the importance of seven PIs of L&T Environment: distribution of the answers (%), median, mean

	Completely unimportant	Unimportant	Important	Very important	Extremely important	Median	Mean
NUMBER and/or PERCENTAGE OF STUDENTS WITH NON-TRADITIONAL BACKGROUND (per higher education institution and/or per department/institute and/or per subject field and/or study programme)	4,5	18,8	36,6	27,7	12,5	3	3,25
NUMBER and/or PERCENTAGE OF STUDENTS WHO USE NETWORKING OPTIONS PROVIDED BY THE HIGHER EDUCATION INSTITUTION THAT MEET THEIR STUDY INTERESTS	3,6	21,6	34,2	32,4	8,1	3	3,20

Table 6: continued

	Completely unimportant	Unimportant	Important	Very important	Extremely important	Median	Mean
NUMBER and DURATION OF STUDENT INTERACTIONS WITH TEACHING STAFF IN THE CLASSROOM (per semester or study period)	0,9	3,5	30,1	45,1	20,4	4	3,81
NUMBER and DURATION OF STUDENT INTERACTIONS WITH TEACHING STAFF ON DIGITAL PLATFORMS (per semester or study period)	0,9	8,9	42,9	35,7	11,6	3	3,48
NUMBER and DURATION OF STUDENT INTERACTIONS WITH TEACHING STAFF DURING ADDITIONAL ACTIVITIES (per semester or study period)	0,9	11,6	38,4	34,8	14,3	3	3,50
STUDENTS' ENTRANCE GRADES (per study programme)	5,3	20,4	35,4	30,1	8,8	3	3,17
STUDENTS' GRADES OF INTRODUCTORY COURSES and/or EXAMINATIONS (per study programme)	4,5	18,0	50,5	20,7	6,3	3	3,06

Figure 4: PIs for L&T Environment by average degree of importance
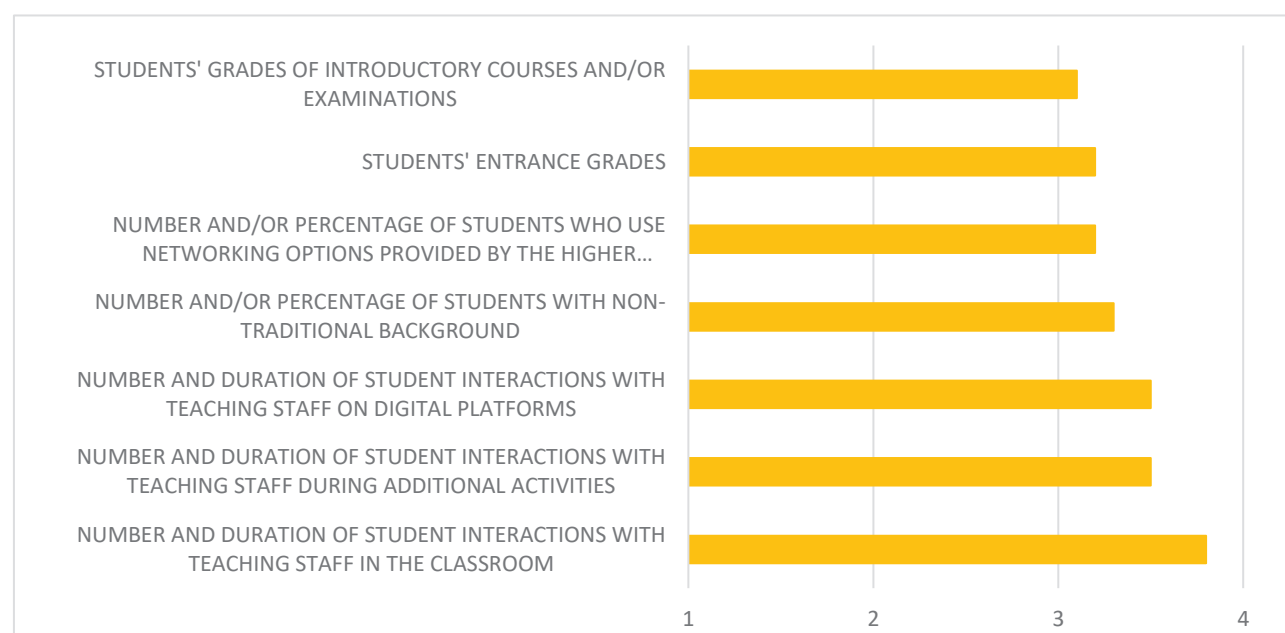
Overall, the results from this section indicate that for most participants, interactions between students and teaching staff are core aspects of the student experience of higher education whereas student grades earlier on in their programme are of less importance.

Assessments of Students

For the time being, assessments of students were not analysed separately because of low respondent numbers.

Assessments of Teachers

The Sample

The total number of respondents who declared belonging to the group of teachers and answered any question other than the respondents' particulars was 50, of whom 45 completed the SQELT survey

questionnaire completely. The summary includes all the answers given to individual questions. Among the respondents identifying themselves with the group of teachers, 16 people declared simultaneous belonging to another group. Almost half of the teachers (23) were representatives of Portuguese institutions, several came from Italy, United Kingdom, Poland, Austria and Germany, while six other countries were represented by a single person each.

**Assessment of the Importance of Performance Indicators**

The PIs that were contained in the questionnaire (see Appendix, Section B-E) were assessed on an ordinal scale, from 1 = completely unimportant to 5 = extremely important. To illustrate the differences between the assessments of individual questions made by a small sample of teachers, the mean response values $\bar{x}$ and 95% confidence intervals were used instead of the median.

Performance Indicators of Teaching Competences and Processes (see Appendix, Section B)

The teachers highly rated the importance of the following five out of ten items available in the group of PIs related to Teaching Competences and Processes (see Figure 5):

- *QUALITY OF TEACHING COURSES (e.g. embedding of courses in curriculum, meaningful course structures, options for participation, imparting knowledge and skills, preparedness of teacher)*

- *TEACHING STAFF'S DIDACTICS COMPETENCES and PEDAGOGICAL KNOWLEDGE and SKILLS*

- *TEACHING STAFF'S FEEDBACK TO STUDENTS (e.g. on work in progress, tests, completed assignments)*

- *TEACHING STAFF WORKLOAD (e.g. official commitment of teaching hours per semester week, number of teaching hours per semester week, number of courses)*

- *QUALITY OF RECRUITMENT PROCEDURES FOR LECTURERS/ASSOCIATE PROFESSORS/FULL PROFESSORS (e.g. procedural responsibilities; recruitment and selection process; recruitment quality criteria)*

Figure 5: PIs of Teaching Competences and Processes – means and confidence intervals of assessed PIs
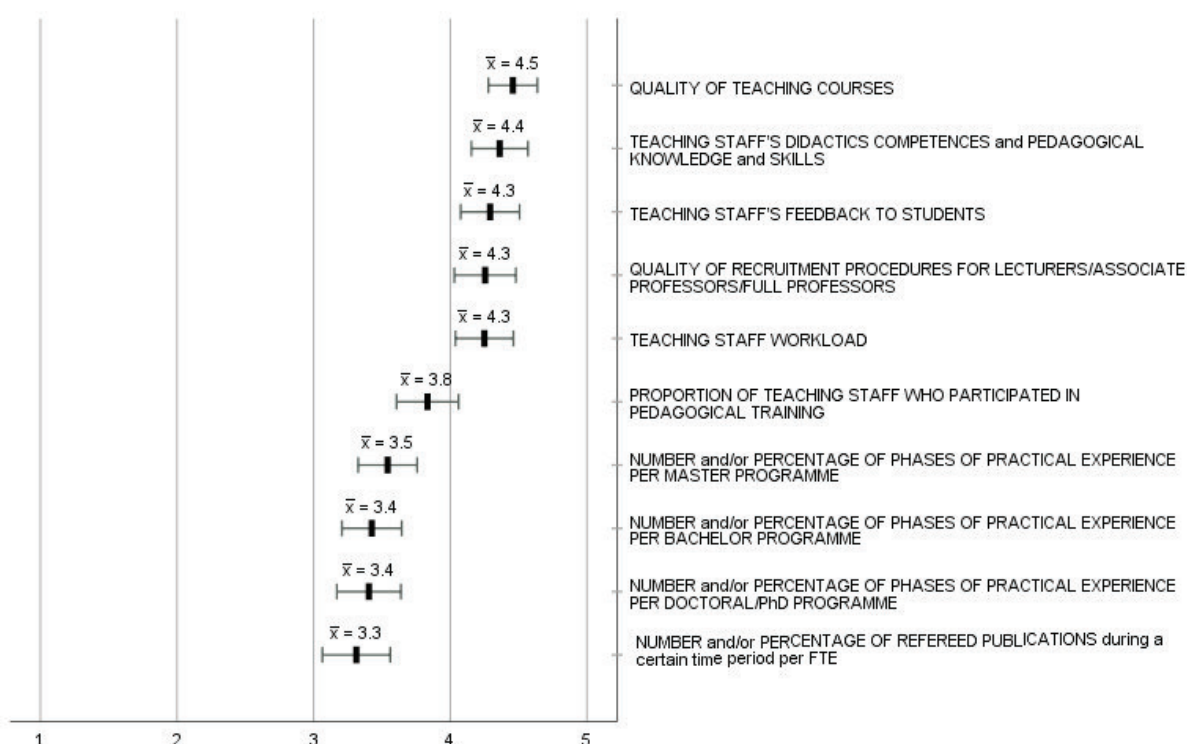
Additionally, one indicator is highly rated within the 95% confidence interval:

- *PROPORTION OF TEACHING STAFF WHO PARTICIPATED IN PEDAGOGICAL TRAINING*

The answers given by the teachers participating in the study can be read directly as a confirmation of the importance of the proposed PIs, as well as a determinant of the key dimensions of the performance area of Teaching Competences and Processes. Among the above important PIs, three principal components can be distinguished (Principal Component Analysis – PCA), which explain 72% of the variance (see Figure 5):

1. quality of the teaching process, which can be described as the overall quality of teaching activities and interactions between the teacher and students;

2. teachers' pedagogical competences, which can be described as the set of pedagogical knowledge and competences at the disposal of teachers;

3. organisation of teachers' work, which can be described as the adequacy of the criteria taken into account in the recruitment and planning of teachers' responsibilities.

The average score for the remaining PIs only slightly exceeds the middle value of the scale, which can be interpreted as the respondents' lack of conviction about their (relative) importance in the evaluation of the PIs of Teaching Competences and Processes (see Figure 5).

Performance Indicators of Learning Competences and Processes (see Appendix, Section C)

The teachers highly rated the importance of the following three out of five items available in the group of PIs related to Learning Competences and Processes (see Figure 6):

- *OVERALL QUALITY OF STUDENT LEARNING EXPERIENCE*

- *STUDENTS' DISPOSITIONS, VALUES AND ATTITUDES TOWARDS LEARNING (measured on the basis of learner data and pedagogical descriptors, e.g. learning-related emotions such as en-joyment, curiosity, frustration, anxiety; ability in deactivating negative learning emotions; learning strategies)*

- *STUDENTS' COMPETENCES WITH RESPECT TO LEARNING and SELF-DIRECTED LEARNING (SDL) (e.g. students' knowledge and understanding of learning theories, own learning processes, problem-based learning, research-based learning, internships, online learning, mobile learning, blended learning)*

Figure 6: PIs of Learning Competences and Processes – means and confidence intervals of assessed PIs
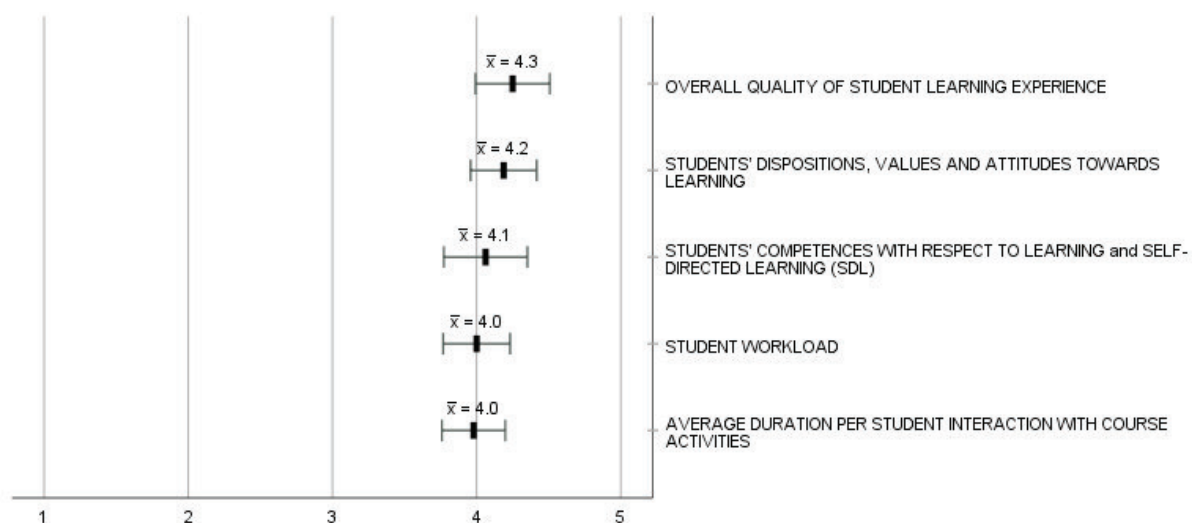
The other two PIs are highly rated within the 95% confidence interval (see Figure 6):

- *AVERAGE DURATION PER STUDENT INTERACTION WITH COURSE ACTIVITIES (e.g. solution of exercises, watching videos, listening to lecture, participation in working groups, etc.)*

- *STUDENT WORKLOAD (e.g. number of learning hours per semester week, number of courses)*

The answers given by the teachers participating in the study can be read directly as a confirmation of the importance of the proposed PIs, as well as a determinant of the area of Learning Competences and Processes as a key dimension (only one component was distinguished (PCA), which explains 50% of the variance) (see Figure 6).

Performance Indicators of Learning Outcomes and Learning Gain and Their Assessment (see Appendix, Section D)

The teachers highly rated the importance of the following seven out of twenty-two items available in the group of PIs related to Learning Outcomes and Learning Gain and Their Assessment (see Figure 7):

- *OVERALL QUALITY OF STUDY EXPERIENCE DURING THE STUDENT LIFE CYCLE*

- *STUDENTS' LEARNING GAIN IN REFLECTIVE COMPETENCES (e.g. systemic thinking, forward thinking, critical thinking, self-perception competence)*

- *STUDENTS' LEARNING GAIN IN LEARNING STRATEGIES AND SELF-LEARNING COMPETENCES (e.g. knowledge of learning theories and practice; collaborative learning)*

- *STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO INTERDISCIPLINARY COMPETENCES (e.g. ability to combine and synthesize knowledge and methodologies from different disciplines)*

- *STUDENTS' LEARNING GAIN WITH RESPECT TO SELFCOMPETENCES (e.g. self-determination; capability of decision and learning; flexibility of action; ability to reflect; sovereignty)*

- *STUDENTS' LEARNING GAIN WITH RESPECT TO SOCIAL COMPETENCES (e.g. team, communication and leadership competences; empathy; ability to cooperate; ability to solve conflicts)*

- *STUDENT ATTRITION (DROP-OUT) (per year per higher education institution and/or per subject field and/or per department/institute and/or per study programme)*

Further three PIs are highly rated within the 95% confidence interval (see Figure 7):

- *STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO METHODOLOGICAL COMPETENCES (e.g. final grades; assessments of individual exams and performances such as presentations, homework, workshops within study courses and study modules)*

- *STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO SUBJECT-MATTER COMPETENCES (e.g. final grades; assessments of individual exams and performances such as presentations, homework, workshops within study courses and study modules)*

- *NUMBER and/or PERCENTAGE OF MASTER GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION (e.g. six months and/or one year) ARE UNEMPLOYED (per higher education institution and/or per subject field and/or department/institute and/or study programme)*

The answers given by the teachers participating in the study can be read directly as a confirmation of the importance of the proposed PIs, as well as a determinant of the key dimensions of the performance area of Learning Outcomes and Learning Gain and Their Assessment. Among the above important PIs, three principal components can be distinguished (PCA), which explain 75% of the variance:

1. quality of studying, as a complex indicator;

2. students' cognitive competences, which can be described as the ability to learn, synthesize knowledge and use it to solve problems;

3. students' learning efficiency, which can be described as the ability to achieving educational, professional and social goals.

The average score for the remaining PIs only slightly exceeds the middle value of the scale, which can be interpreted as the respondents' lack of conviction about their (relative) importance in the evaluation of the performance area of Learning Outcomes and Learning Gain and Their Assessment (see Figure 7).

Figure 7: PIs of Learning Outcomes and Learning Gain and Their Assessment – means and confidence intervals of assessed PIs

The teachers highly rated the importance of only one out of seven items available in the group of PIs related to L&T Environment:

- *NUMBER and DURATION OF STUDENT INTERACTIONS WITH TEACHING STAFF IN THE CLASSROOM (per semester or study period)*

The average score for the remaining PIs only slightly exceeds the middle value of the scale, which can be interpreted as the respondents' lack of conviction about their importance in the evaluation of the performance area of L&T Environment (see Figure 8).

Figure 8: PIs of Learning and Teaching Environment – means and confidence intervals of assessed PIs
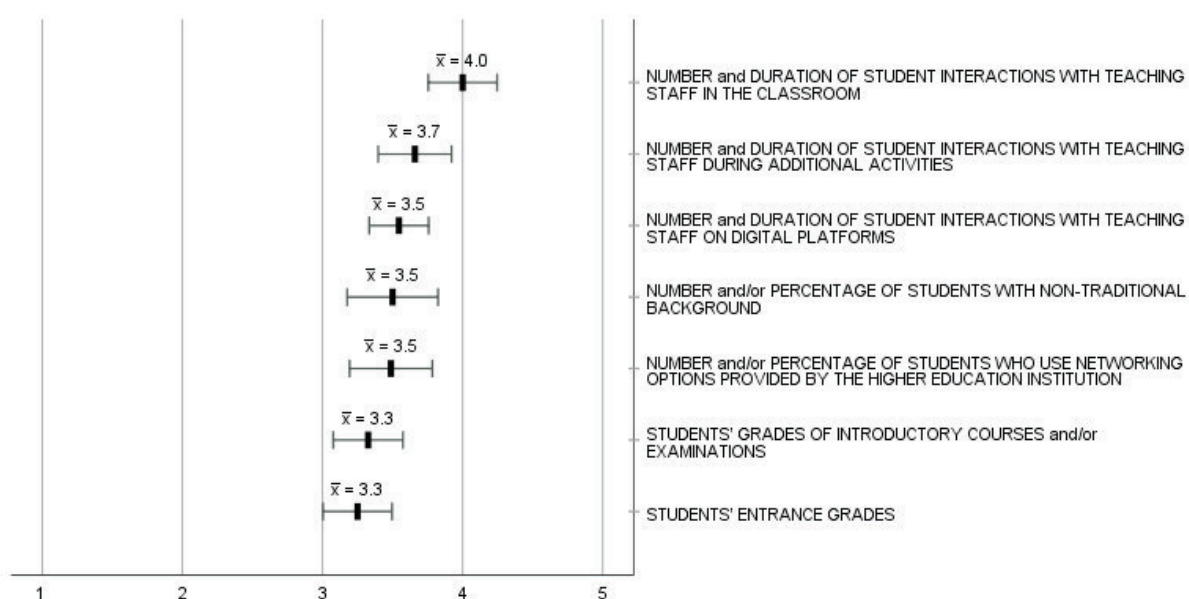
It is worthwhile noting that the results in this section are all in good accordance with the analysis and interpretation in earlier sections of this report.

## Assessments of Leadership

In total, 16 representatives of the stakeholder group of institutional leadership have filled the SQELT online survey; nine respondents answered the survey completely while seven answered only partially. The respondents came from 12 countries: four responses were from Portuguese leadership, two from Austria, Germany, and Italy each, while other nations mainly from Europe (Belgium, Denmark, England, Namibia, Norway, Poland, Scotland, Turkey) were represented just once. The findings of the leadership's responses are summarised in Figure 9, which provides an overall synthesis of the entire set of responses, and Figures 10, 11, 12, and 13, that illustrate the results for the four L&T domains that were used to structure and subdivide the SQELT comprehensive set of PIs: Teaching competences and processes; Learning competences and processes; Learning outcomes and learning gain and their assessment; L&T environment.

Based on Figure 9, it can be argued that the importance of the subset of SQELT PIs listed through the survey, has been judged extremely high or very high by 55% of the respondents, whereas only 10% assessed the surveyed PI set as unimportant or completely important. However, finer differences can be noted by looking at Figures 10, 11, 12, and 13, each corresponding to one of the four L&T domains.

In general terms, it can be claimed that the perceived importance of PIs belonging to both 'Teaching competences and processes' and 'Learning competences and processes' domains is higher compared to the other two L&T domains. The percentage of at least 'very important' responses is indeed equal to 66% (Teaching competences and processes) and 71% (Learning competences and processes) whereas for the 'Learning

outcome and gain' and 'L&T environment' this stops at 52% and 40%. Among the four L&T domains, the PIs from the 'L&T environment' area seem to be perceived as the least important.

Figure 9: Percentage of responses on the importance of the PIs of the SQELT survey on L&T quality displayed by leadership respondents
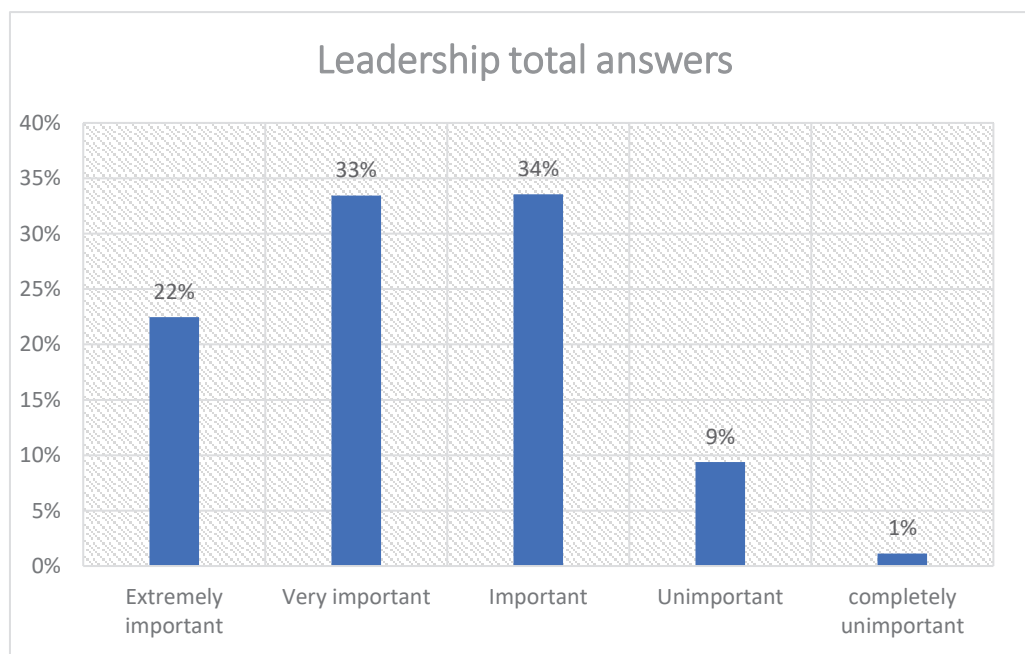
If the responses concerning the domain of 'Teaching competences and processes' are analysed, it emerges that the assessment of teaching staff's didactics competences/pedagogical skills as well as teaching staff's feedbacks to students are considered the most important to measure teaching quality, whereas PIs like '*Number/percentage of phases of practical experience per Bachelor/Master/PhD programme (e.g. work experience, internship)*' have been judged less relevant by the leadership group.

Concerning the domain of 'Learning competences and processes', three aspects were assessed as particularly important to measure L&T quality, presenting indeed the highest share of 'extremely important' answers. These are the '*Students' dispositions/values/attitudes towards learning'*, the '*Students' competences with respect to self-directing learning*' and the judgement on the '*Overall quality of student learning experience'.*

Within the domain of 'Learning outcomes and gain' a more heterogeneous picture was found due to a higher percentage of 'unimportant' responses. These are mainly concentrated across PIs related to students' career progression such as '*Number/percentage of students who did not complete the first year of study*' or related to potentially more innovative activities of the L&T process such as '*Number/percentage of students performing an internship*' and '*Percentage of credit points awarded in service-learning activities (e.g. community serving activities and social work)*'. On the contrary, the PIs presenting the highest perceived importance are mainly related to the different aspects of student learning gain. However, it is interesting to note that the students learning gain items with the greatest share of 'extremely important' answers are not those concerning subject-matter or methodological competences but those about '*Reflective competences (e.g. systemic thinking, forward thinking, critical thinking, self-perception competence)*', '*Learning strategies and self-learning competences (e.g. knowledge of learning theories and practice; collaborative learning)'* and '*Self-competences (e.g. self-determination; capability of decision and learning; flexibility of action; ability to reflect etc.)*'. These are crucial elements of the so-called "soft skills", increasingly important for the knowledge economy and labour market.

Finally, as mentioned previously, the items belonging to the area of L&T Environment display the lowest perceived importance to measure and assess L&T quality. The '*Number and duration of students interactions with teaching staff during digital platform and additional activities*' were considered at least important by half of the leadership's respondents, other items such as '*Student's entrance grades*', '*Students' grades of*

introductory courses' were ultimately judged as less crucial to assess L&T quality. However, it must be underlined that here, as across all the other L&T domains, the number of 'completely unimportant' answers is almost equal to zero.

Figure 10: Percentage of 'extremely important', 'very important', 'important', 'unimportant' and 'completely unimportant' answers for the L&T domain "Teaching competences and processes"

Teaching competences and processes
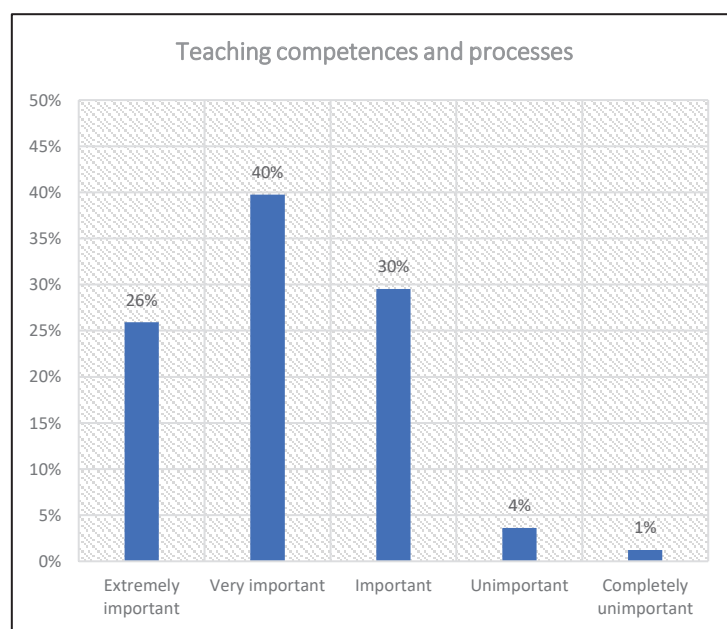
Figures 11: Percentage of 'extremely important', 'very important', 'important', 'unimportant' and 'completely unimportant' answers for the L&T domain "Learning competences and processes"

Learning competences and processes
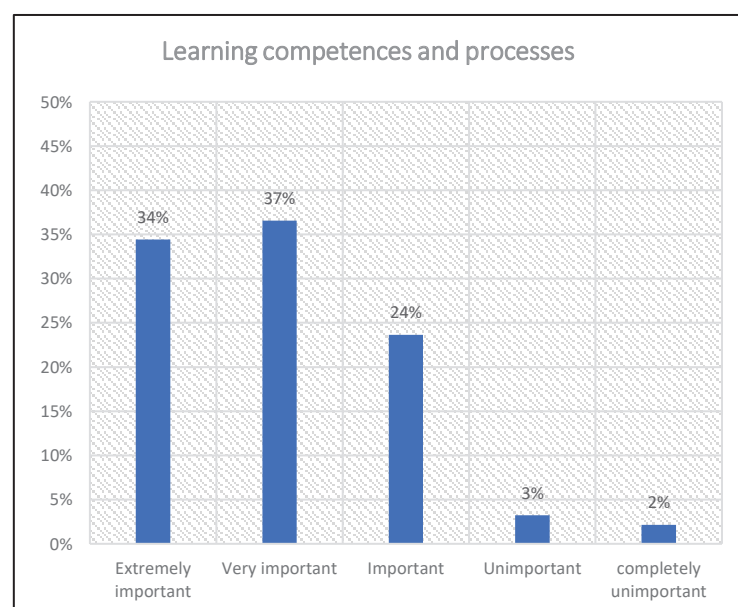
Figures 12: Percentage of 'extremely important', 'very important', 'important', 'unimportant' and 'completely unimportant' answers for the L&T domain "Learning outcomes and learning gain and their assessment"
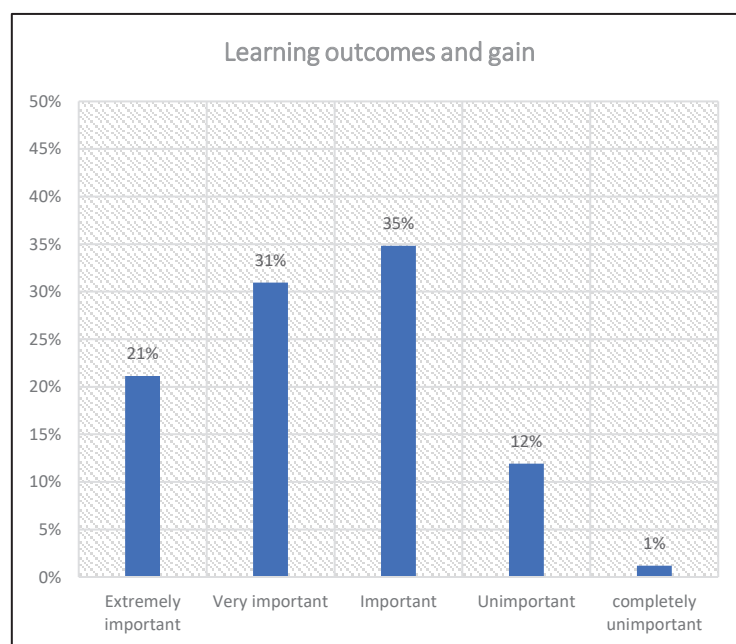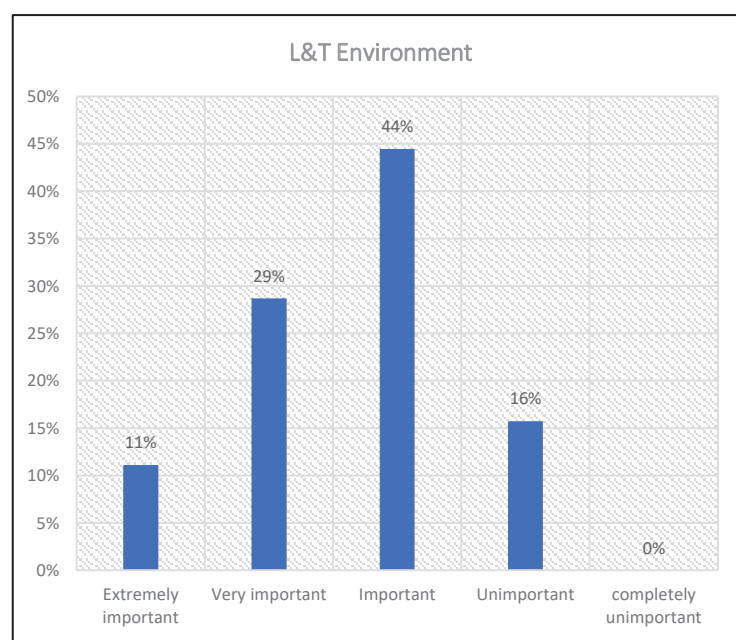

Figure 13: Percentage of 'extremely important', 'very important', 'important', 'unimportant' and 'completely unimportant' answers for the L&T domain "L&T environment"

Assessments of All Respondents on Selected Quality Areas of Learning and Teaching

In this section, the focus of analysis of the responses to the SQELT online survey (see Appendix) is on the assessments of all respondents (N = 258) about 44 PIs of L&T that were selected from the SQELT comprehensive PI set (SQELT-MIO, 2020). A sub-set of 22 PIs of these 44 PIs is selectively grouped here to represent and investigate the following five specific areas of L&T quality: quality of teaching staff; quality of study experience; completion rates of study; students' employability; students' competences.

As documented in the Appendix, the closed question presented to the survey respondents was the same for all PIs (cf. Tables 7-28) and reads:

In your view, how important are the following PIs for the quality management of L&T in higher education?

The possible replies were as follows: extremely important; very important; important; unimportant; completely unimportant; no reply (cf. Tables 7-28).

Quality of Teaching Staff

Teaching staff is key for the quality of teaching, and by this also for L&T. Recruitment and the training of teaching staff are moving into the focus of consideration. Not surprisingly, 66.7% of the respondents qualify pedagogical training of teaching staff to be important, very important or extremely important (Table 7). Almost identical is the value for regarding the recruitment procedures as being important, very important or extremely important, namely 67.3% (Table 8). All of this should feed into the didactical competences and pedagogical knowledge and skills of the teaching staff (Table 9), which also finds an expression in the extent with which teaching staff is providing a feedback to the students (regarded to be important, very important or extremely important by 71.9% of the respondents) (Table 10). This apparently is in line with an emphasis on the duration of student interactions with the teaching staff in classroom (considered as important, very important or extremely important by 77.7% of the respondents) (Table 11). The duration of student interaction with teaching staff on digital platforms also matters (seen as important, very important or extremely important by 72.7% of the respondents) (Table 12), but this is not the same as the direct student/teacher interaction in class. This may reflect some of the tendencies as they are being caused by the Covid-19 pandemic. But it may also mean that one key for the future of L&T may lie in the challenges and opportunities of creating "blended formats", where class-based teaching in a presence mode is combined with a virtual-online teaching in a more remote mode. The duration of student interaction with teaching staff during additional activities also ranks high (perceived as important, very important or extremely important by 70.5% of the respondents) (Table 13), but places already slightly behind the interaction directly in classroom and the interactions on digital platforms.

Table 7: Assessments of the importance of the PI "PROPORTION OF TEACHING STAFF WHO PARTICIPATED IN PEDAGOGICAL TRAINING"

Reply	Frequencies	Percentage
Extremely important	21	12.28%
Very important	61	35.67%
Important	32	18.71%
Unimportant	7	4.09%
Completely unimportant	3	1.75%
No reply	47	27.49%

Table 8: Assessments of the importance of the PI "QUALITY OF RECRUITMENT PROCEDURES FOR LECTURERS/ASSOCIATE PROFESSORS/FULL PROFESSORS (e.g. procedural responsibilities; recruitment and selection process; recruitment quality criteria)"

Reply	Frequencies	Percentage
Extremely important	47	27.49%
Very important	46	26.90%
Important	22	12.87%
Unimportant	7	4.09%
Completely unimportant	2	1.17%
No reply	47	27.49%

Table 9: Assessments of the importance of the PI "TEACHING STAFF'S DIDACTICS COMPETENCES and PEDAGOGICAL KNOWLEDGE and SKILLS"

Reply	Frequencies	Percentage
Extremely important	61	35.67%
Very important	46	26.90%
Important	13	7.60%
Unimportant	2	1.17%
Completely unimportant	1	0.58%
No reply	48	28.07%

Table 10: Assessments of the importance of the PI "TEACHING STAFF'S FEEDBACK TO STUDENTS (e.g. on work in progress, tests, completed assignments)"

Reply	Frequencies	Percentage
Extremely important	51	29.82%
Very important	53	30.99%
Important	19	11.11%
Unimportant	1	0.58%
Completely unimportant	0	0.00%
No reply	47	27.49%

Table 11: Assessments of the importance of the PI "NUMBER and DURATION OF STUDENT INTERACTIONS WITH TEACHING STAFF IN THE CLASSROOM (per semester or study period)"

Reply	Frequencies	Percentage
Extremely important	23	16.55%
Very important	51	36.69%
Important	34	24.46%
Unimportant	4	2.88%
Completely unimportant	1	0.72%
No reply	26	18.71%

Table 12: Assessments of the importance of the PI "NUMBER and DURATION OF STUDENT INTERACTIONS WITH TEACHING STAFF ON DIGITAL PLATFORMS (per semester or study period)"

Reply	Frequencies	Percentage
Extremely important	13	9.35%
Very important	40	28.78%
Important	48	34.53%
Unimportant	10	7.19%
Completely unimportant	1	0.72%
No reply	27	19.42%

Table 13: Assessments of the importance of the PI "NUMBER and DURATION OF STUDENT INTERACTIONS WITH TEACHING STAFF DURING ADDITIONAL ACTIVITIES (e.g. research work, research camps, consultations, conferences) (per semester or study period)"

Reply	Frequencies	Percentage
Extremely important	16	11.51%
Very important	39	28.06%
Important	43	30.94%
Unimportant	13	9.35%
Completely unimportant	1	0.72%
No reply	27	19.42%

Quality of Study Experience

The good integration of courses into the overall context of a study programme is being qualified by 72.5% of the respondents to be important, very important or extremely important (Table 14). Interestingly, practical experience is being regarded to be more important at the Master programme level (more so than at the level of Bachelor or Doctoral programmes), seen as important, very important or extremely important by 63.7% of the respondents (Table 15). Similarly, 61.7% of the respondents qualify internships at the level of Bachelor studies as important, very important or extremely important (Table 16). The overall quality of the student learning experience (Table 17) apparently seems to associate, or at least co-associate, with a fair workload for the students, qualified as being important, very important or extremely important by 74.5% of the respondents (Table 18). Also, the overall quality of the study experience is rated highly, with 75.2% of the respondents saying that this is important, very important or extremely important (Table 19).

Table 14: Assessments of the importance of the PI "QUALITY OF TEACHING COURSES (e.g. embedding of courses in curriculum, meaningful course structures, options for participation, imparting knowledge and skills, preparedness of teacher)"

Reply	Frequencies	Percentage
Extremely important	72	42.11%
Very important	42	24.56%
Important	10	5.85%
Unimportant	0	0.00%
Completely unimportant	0	0.00%
No reply	47	27.49%

Table 15: Assessments of the importance of the PI "NUMBER and/or PERCENTAGE OF PHASES OF PRACTICAL EXPERIENCE PER MASTER PROGRAMME (e.g. work experience, internships, external projects)"

Reply	Frequencies	Percentage
Extremely important	19	11.11%
Very important	48	28.07%
Important	42	24.56%
Unimportant	10	5.85%
Completely unimportant	1	0.58%
No reply	51	29.82%

Table 16: Assessments of the importance of the PI "NUMBER and/or PERCENTAGE OF BACHELOR STUDENTS PERFORMING AN INTERNSHIP (per higher education institution and/or per subject field and/or department/institute and/or study programme)"

Reply	Frequencies	Percentage
Extremely important	12	8.05%
Very important	29	19.46%
Important	51	34.23%
Unimportant	19	12.75%
Completely unimportant	3	2.01%
No reply	35	23.49%

Table 17: Assessments of the importance of the PI "OVERALL QUALITY OF STUDENT LEARNING EXPERIENCE"

Reply	Frequencies	Percentage
Extremely important	59	36.65%
Very important	43	26.71%
Important	18	11.18%
Unimportant	0	0.00%
Completely unimportant	1	0.62%
No reply	40	24.84%

Table 18: Assessments of the importance of the PI "STUDENT WORKLOAD (e.g. number of learning hours per semester week, number of courses)"

Reply	Frequencies	Percentage
Extremely important	34	21.12%
Very important	55	34.16%
Important	31	19.25%
Unimportant	3	1.86%
Completely unimportant	0	0.00%
No reply	38	23.60%

Table 19: Assessments of the importance of the PI "OVERALL QUALITY OF STUDY EXPERIENCE DURING THE STUDENT LIFE CYCLE"

Reply	Frequencies	Percentage
Extremely important	49	32.89%
Very important	53	35.57%
Important	10	6.71%
Unimportant	3	2.01%
Completely unimportant	0	0.00%
No reply	34	22.82%

Completion Rates of Study

The data show that there is a certain tendency that, for the respondents, student drop-out at the undergraduate level matters more than at the graduate level, therefore a greater attention should be devoted to support students in their aim to complete first-cycle degrees (Table 20 and Table 21). In that context it is also interesting that entrance grades of students, in relative terms, are not being regarded to be of a similar importance (60.4% of the respondents qualify them as important, very important or extremely important) (Table 22) when being compared with the theme (and issue) of drop-out. Similarly, 61.9% of the respondents see the grades of introductory courses or examinations to be important, very important or extremely important (Table 23).

Table 20: Assessments of the importance of the PI "NUMBER and/or PERCENTAGE OF STUDENTS WHO DID NOT COMPLETE THE FIRST YEAR OF STUDY"

Reply	Frequencies	Percentage
Extremely important	29	19.46%
Very important	32	21.48%
Important	42	28.19%
Unimportant	10	6.71%
Completely unimportant	2	1.34%
No reply	34	22.82%

Table 21: Assessments of the importance of the PI "NUMBER and/or PERCENTAGE OF STUDENTS WHO DID NOT COMPLETE THE UNDERGRADUATE PROGRAMMES WITHIN THE PLANNED PROGRAMME DURATION (Bachelor graduation on time)"

Reply	Frequencies	Percentage
Extremely important	19	12.75%
Very important	39	26.17%
Important	46	30.87%
Unimportant	9	6.04%
Completely unimportant	3	2.01%
No reply	33	22.15%

Table 22: Assessments of the importance of the PI "STUDENTS' ENTRANCE GRADES (per study programme)"

Reply	Frequencies	Percentage
Extremely important	10	7.19%
Very important	34	24.46%
Important	40	28.78%
Unimportant	23	16.55%
Completely unimportant	6	4.32%
No reply	26	18.71%

Table 23: Assessments of the importance of the PI "STUDENTS' GRADES OF INTRODUCTORY COURSES and/or EXAMINATIONS (e.g. in mathematics, languages) (per study programme)"

Reply	Frequencies	Percentage
Extremely important	7	5.04%
Very important	23	16.55%
Important	56	40.29%
Unimportant	20	14.39%
Completely unimportant	5	3.60%
No reply	28	20.14%

Students' Employability

There are different indicators for employability. In the opinion of the surveyed respondents, the employability of the Master graduates apparently matters most. In that line of reasoning, 69.1% of the respondents regard unemployment among Master graduates as an important measure for assessing employability (Table 24). The employability of Doctoral (PhD) graduates does not receive the same amount of consideration.

Table 24: Assessments of the importance of the PI "NUMBER and/or PERCENTAGE OF MASTER GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION (e.g. six months and/or one year) ARE UNEMPLOYED (per higher education institution and/or per subject field and/or department/institute and/or study programme)"

Reply	Frequencies	Percentage
Extremely important	22	14.77%
Very important	40	26.85%
Important	41	27.52%
Unimportant	5	3.36%
Completely unimportant	4	2.68%
No reply	37	24.83%

Students' Competences

Concerning the examination and assessment results with respect to subject-matter competences of students, here 73.8% of the respondents qualify these to be important, very important or extremely important (Table 25). With regard to further competences, the ranking of the respondents is as follows, when based on the perception of aggregate importance (important, very important or extremely important): social competences 75.8% (Table 26), self-competences 75.2%, interdisciplinary competences 74.5% (Table 27), learning strategies and self-learning competences 73.8%, reflective competences 73.8%, methodological competences 72.5%, quantitative reasoning 71.8%, and sustainability development competences 64.9% (Table 28).

Table 25: Assessments of the importance of the PI "STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO SUBJECT-MATTER COMPETENCES (e.g. final grades; assessments of individual exams and performances such as presentations, homework, workshops within study courses and study modules)"

Reply	Frequencies	Percentage
Extremely important	24	16.11%
Very important	57	38.26%
Important	29	19.46%
Unimportant	4	2.68%
Completely unimportant	1	0.67%
No reply	34	22.82%

Table 26: Assessments of the importance of the PI "STUDENTS' LEARNING GAIN WITH RESPECT TO SOCIAL COMPETENCES (e.g. team, communication and leadership competences; empathy; ability to co-operate; ability to solve conflicts)"

Reply	Frequencies	Percentage
Extremely important	41	27.52%
Very important	46	30.87%
Important	26	17.45%
Unimportant	2	1.34%
Completely unimportant	0	0.00%
No reply	34	22.82%

Table 27: Assessments of the importance of the PI "STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO INTERDISCIPLINARY COMPETENCES (e.g. ability to combine and synthesize knowledge and methodologies from different disciplines)"

Reply	Frequencies	Percentage
Extremely important	40	26.85%
Very important	49	32.89%
Important	22	14.77%
Unimportant	3	2.01%
Completely unimportant	0	0.00%
No reply	35	23.49%

Table 28: Assessments of the importance of the PI "STUDENTS' LEARNING GAIN IN HIGHER EDUCATION FOR SUSTAINABILITY DEVELOPMENT (HESD) COMPETENCES (e.g. according to the UNESCO's 17 Sustainability Development Goals)"

Reply	Frequencies	Percentage
Extremely important	19	12.75%
Very important	41	27.52%
Important	36	24.16%
Unimportant	13	8.72%
Completely unimportant	2	1.34%
No reply	38	25.50%

Lessons Learned

There are a few lessons and suggestions to be learned that are corroborated by the assessments of survey respondents on the following selected quality areas of L&T analysed above:

Quality of teaching staff

This is of a crucial importance. Selection of teaching staff matters, so to ensure that there is teaching staff with the respective (and wanted) didactical competences and pedagogical knowledge and skills. But equally important are structural support measures of the higher education organisation, supporting further improvement of the teaching qualities of teaching staff, for example particular training courses being offered to teaching staff. Students are interested in a direct interaction with their teachers in class. So, this leads to the challenge of creating "blended formats", where class-based teaching in a presence mode can be combined with a virtual-online teaching in a more remote mode.

Quality of study experience

The quality of study experience is partly determined by structural conditions, such as a good curriculum and a reasonable workload. However, the quality experience also relies on other factors, such as motivation and engagement, for example the motivation of teaching staff.

Completion rates

It may mean that drop-out rates at the undergraduate level are perceived as more severe than at the graduate level. There can be something like a "flow argument" to be formulated: If you do not complete undergraduate higher education, then you cannot proceed forward to graduate education. Once you enter graduate education, you already completed a first cycle of academic degree, by this elevating the overall educational levels in a society.

Employability

With regard to employability, it may be that the assessment here is reverse to the assessment on completion rates. Employability of Master level graduates appears to be slightly more important than the employability of the Bachelor level graduates. Perhaps this reflects an understanding that Master studies are more specifically designed and tailored than basic (and general) Bachelor studies, therefore Master studies also already should have greater effects in the sense of a pay-off for those, who graduate from there.

Students' competences

Concerning the competences, which students acquire (further) during their studies, the requirements nowadays are to create competence-combinations. On the one hand, the subject-matter competences are essential. But these must be combined with other competences, such as social competences, or also subject-based competences across a diversity of different fields. The need for an interdisciplinary and transdisciplinary arrangement of competences, which students (and graduates) should acquire or develop further during their studies, represents an assertion, which already is being addressed in current discussions. So, this is not new news. However, the challenge here is, how to implement structures and processes in L&T, so that

these types of competence development can actually become manifest and develop in ways, so (for example) to support the employability of graduates.

Respondents' Full-Text Comments on the Role of Performance Indicators

Methodology

At the end of the SQELT survey two questions (see next section and Appendix) asked respondents for a full-text answer. From the 117 complete responses to the survey, that are evaluated in this report, 70 responses have a full-text answer to question 1 and 67 have a full-text answer to question 2. These answers are analysed and interpreted in this section.

The survey respondents' full-text answers to the two questions are treated with the systematic procedure of Qualitative Content Analysis (QCA) (cf. e.g. Mayring, 2000; 2020). A very brief characterisation of QCA that applies in the present context is as follows: QCA is composed of a bundle of techniques for systematic qualitative text analysis which does not exclude quantitative content analysis. QCA can be applied to all sorts of recorded communication, for example, transcripts of interviews, discourses, protocols of observations, video tapes, documents, etc. In general, QCA is conceived as to analyse the manifest or primary content as well as latent content or context information and formal aspects of the (syntactic) material. To achieve this, QCA treats its object text as embedded into a model of communication (e.g. thematically focused interview; structured online survey) within which the aims of the analysis are defined. Since it is a core characteristic of QCA that its analysis is based on categories, inductive category development and deductive category application are two core elements of a QCA procedure.

The complete methodological equipment of QCA (Mayring, 2000; 2020) cannot be explained within this short overview nor could it be fully applied in the present case, mainly for three reasons: Firstly, the contents addressed in the SQELT Survey's open questions were rather specific and focused on a rather narrow semantic field. Secondly, there was a somewhat limited number of respondents. Thirdly, the respondents' answers and comments were relatively compact and short. Because of these reasons the semantic field (its extension and diversity) of all answers together is not very large which is why its categorical analysis is conceptually not very complex and offers relatively little room for dispute about alternative categories.[2]

These facts together with the small sample justify that no quantitative analysis of the full-text comments is carried out.

Analysis and Interpretation

Question 1 that asked respondents for full-text comments on the role of performance indicators (PIs) reads:

Which challenges and opportunities do you see when using performance indicators of learning and teaching at/by your institution (e.g. in quality assessments/evaluations; accreditation; benchmarking/classification; decision-making), if applicable?

The meaning of question 1 as intended by the authors of the survey questionnaire, i.e. the expectations towards the respondents were as follows: to name challenges and opportunities that are related to or emerge when using PIs of learning and teaching (L&T) at (the respondents') higher education institutions; these challenges and opportunities may be related to evaluations, accreditations, benchmarking procedures, decision-making etc. An inspection of the survey responses to question 1 showed that only few respondents named opportunities and some more named challenges of PI usage. Several respondents, however, mentioned neither of these but other relevant issues.

Question 2 that asked respondents for full-text comments on the role of PIs reads:

In your view, in which ways do performance indicators improve decision-making in higher education?

The meaning of question 2 as intended by the authors of the survey questionnaire, i.e. the expectations towards the respondents were the following: to describe processes, procedures or mechanisms or the like how PIs (contribute to) improve decision-making in higher education institutions and the higher education

---

[2] This implies, for example, that the coding rules are rather easy and simple.

system. Obviously, it is up to the respondent(s) to which decisions in which area of higher education (e.g. politics, institutional strategy and policy, organisational development, quality development of study programmes etc.) and therefore to which PIs they may refer.

An inspection of the survey responses to question 2 showed that a larger part of the different answers suggested that question 2 probably was too complex and complicated to answer in a brief and quick online survey. Or in other words, one might say that question 2 was phrased in a way that was not sufficiently specific (for the respondents in the sample). Particularly, it might be therefore assumed that it was difficult for respondents to quickly identify concrete decision processes in higher education and how they might be improved by using PIs of L&T. In fact, respondents hardly mentioned any such mechanisms for decision improvement. Instead, a majority of responses referred to general roles of PIs for decision-making in higher education.

In consequence of these considerations, the following meta-categories for analysing the full-text answers were induced from the text material (including the two questions):

- Opportunities of PI usage (see Table 29)

- Challenges of PI usage (see Table 30)

- Important functions of PIs (see Table 31)

- PIs' role in decision-making (see Table 32)

A few respondents indirectly express that they see the opportunity that, based on PIs, transparency of L&T-related processes might be realisable which could enable benchlearning. Another opportunity mentioned is that adequate PIs could enable the evaluation of individual learning gain, thus implementing Learning Analytics. For these two issues compact, easy-to-read text examples from the survey responses are not available (Table 29).

Table 29: Opportunities of PI usage (meta-category)

Category	Definition	Examples (from survey responses)	Coding rules
Transparency of L&T-related procedures between different higher education institutions (option for benchlearning)	L&T performance must be reliably assessed and measured on the basis of PIs PIs, assessment and measurement methodologies must be the same or comparable Performance data and information must be exchanged between different higher education institutions	No compact, easy-to-read example available	A selection of words or phrases from the definition or synonymous expressions must be mentioned
Learning Analytics	For example, individual learning gain must be reliably assessed and measured on the basis of PIs	No compact, easy-to-read example available	

Answers that can be subsumed under the meta-category "Challenges of PI usage" were richer, more diverse and could be ordered according to the following 14 categories each of which identifies a challenge of PI usage mentioned by respondents (Table 30):

- Stakeholder participation in PI development (1)

- PIs grasping relevant phenomena (2)

- Not reducing PIs to quantitative PIs only (3)

- Reliable determination ("measurement") of complex qualitative PIs (4)

- Closing the Deming cycle (5)

- Learning Analytics (6)

- PIs are contextualised (7)

- PIs respect data privacy (8)

- Transparency of PIs in accreditations (9)

- Engaging students in (PI-informed) QM (10)

- Training of evaluation peers in adequate application of PIs (11)

- Making use of PI-based machine learning and Artificial Intelligence in QM (12)

- Not to (mis-)use PIs as goals in themselves (13)

- Not to (mis-)use PIs to blame teachers (14)

Again, no quantitative weights can be related to these challenges because of the small sample. In qualitative terms, however, the answers are explorative[3] and informative as the text examples show that are presented in the third column of Table 30. Apart from the lack of the argumentation power of large numbers, Table 30 shows that the survey respondents had an understanding of several relevant challenges of PI usage in higher education L&T. Against the background of the SQELT project and its benchlearning process (see e.g. Leiber, 2020; SQELT-MIO, 2020) and in view of experience and knowledge about QM in higher education L&T (see e.g. Leiber, 2019b), the probably most important challenges of PI usage are listed under numbers (1), (3), (4), (5) (a classic), (6) and (8).

Table 30: Challenges of PI usage (meta-category)

Category	Definition[4]	Examples (from survey responses)
(1) Stakeholder participation in PI development	Processes, responsibilities, and decision-making in PI development must be defined and followed in practice.	'Teaching staff […] often also feel as if they are not consulted in the process of formulating such PIs and in the process of exploring the best ways to improve on the areas identified by PIs.' (2, 108)[5] 'In my opinion performance indicators created only by the academic community (students and faculty) are the ones that can improve decision-making in higher education.' (2, 204)
(2) PIs grasping relevant phenomena	The data and information collection for the PI must reliably capture relevant phenomenal aspects.	'A challenge is to develop and select relevant PIs that grasp the intended phenomena/qualities in plausible and not too under-complex ways.' (1, 3)
(3) Not reducing PIs to quantitative PIs only	Relevant PIs shall not be restricted to purely quantitative PIs.	'There is the risk and misunderstanding that still PIs are often conceived as quantitative PIs only.' (1, 3)
(4) Reliable determination ("measurement") of complex qualitative PIs	The data and information collection for the PI must be methodologically reliable.	'One of the main challenges is related to the accurate measurement of the indicators, particularly with those indicators related to aspects that are hardly measurable, such as social competences and students' attitudes.' (1, 299)
(5) Closing the Deming cycle	PIs must be integrated into the quality improvement cycle (plan-do-check-act/PDCA-cycle) that should be closed by implementing the act phase.	'The characteristics of the indicators must have consequences and these consequences must be tracked.' (1, 109)
(6) Learning Analytics	For example, PIs grasping the individual L&T interaction between student and teacher; other student engagement; individual students' learning gain PIs that would give options for real time interventions	'The teaching and learning experience still is most of all influenced by the individual teacher and the individual student. It is important to have as much as possible a qualitative approach to Performance Indicators and base the most judgement on the interaction between student and teacher and the feedback given by the individual students to their learning experience.' (1, 17) It is desirable to have PIs that 'offer [options for] real time interventions', instead of solely 'retrospective' PIs. (2, 110)

---

[3] The categories mentioned in Table 30 could be further used for investigating deeper into the challenges of PI usage in higher education L&T.
[4] If needed, related coding rules are to be composed of selections of words or phrases from the definition or synonymous expressions.
[5] These numbers in brackets are project-internal code numbers.

Table 30: continued

Category	Definition[6]	Examples (from survey responses)
(7) PIs are contextualised	It must be explicit and transparent how PIs are defined, monitored, measured, assessed and successfully applied.	'Performance indicators provide comparative information but often lack contextualisation. And quality is quality within a certain context.' (1, 13) 'Different subjects have different requirements etc.' (1, 93)
(8) PIs respect data privacy	The applicable data privacy laws and regulations (e.g. according to GDPR) must be made explicit.	'Another challenge when using PIs is to take care of the individuals' privacy according to GDPR or similar regulations.' (1, 3)
(9) Transparency of PIs in accreditations	Criteria and questionnaire guidelines must make transparent the PIs that are used.	'It is a challenge (that has not been solved so far) that accreditations usually do not make explicit/transparent the use of PIs (although they make use of them).' (1, 3)
(10) Engaging students in (PI-informed) QM	Processes, responsibilities, and decision-making in PI informed QM must be defined and followed in practice where students should engage.	'We should move towards focusing on the factors that engage students […] to integrate more factors in the quality management systems.' (2, 155)
(11) Training of evaluation peers in adequate application of PIs	The competences of evaluation peers referring to adequate application of PIs must be defined and used for further education programmes.	'Peer reviewers, if not very well-trained and also experienced in evaluations, may not be as sensitive to put as much emphasis on some indicators as on what they use in their own day-to-day work. The opportunity [better: challenge] is therefore in increased and better training. It would be desirable to work out core training package to be used on a European-wide level based on best practices of individual [QA] agencies.' (1, 100)
(12) Making use of PI-based machine learning and Artificial Intelligence in QM	Algorithms must be deployed to exploit the potential of PIs.	'We should […] make use of machine learning and AI to integrate more factors in the quality management systems.' (2, 155)
(13) Not to(mis-)use PIs as goals in themselves	It must be avoided that the generation of PI values becomes a goal in its own and detached from development-oriented QM.	'Well intentioned PIs can ironically take teaching staff away from important teaching/learning activity and their commitment to the students (e.g. shifting their energy towards more administrative and auditing activity).' (1, 108)
(14) Not to (mis-)use PIs to blame teachers	The following must be avoided: PI-informed pressure added on teaching staff by blaming them for students' failure; culture of fear (among teachers)	'The key challenge is not to use this as a way to blame the teaching staff for student performance.' (1, 97)

Another meta-category addressed by the survey full-text responses is named "Important functions of PIs" (Table 31) by the authors of this report (inductive categorisation). For the sake of brevity and because the categories subsumed under this meta-category are not of a complex kind, the definitions and coding rules are suppressed in this case. The important functions of PIs mentioned by the respondents are

- Strategic planning
- Quality improvement/quality assurance
- Establish benchmarks
- Identify good practice examples
- Accountability
- Control
- Marketing

As before, a quantitative weight cannot be given to these seven categories mentioned by individual respondents. Instead, the categories explore what respondents think important functions of PIs could be.[7]

---

[6] If needed, related coding rules are to be composed of selections of words or phrases from the definition or synonymous expressions.
[7] The categories mentioned in Table 31 could be further used for investigating deeper into the functions of PIs in higher education L&T.

Although the survey sample was small, it is interesting to note that all typical basic functions of PIs (in the context of QM) are mentioned by the respondents, see Table 31 (left column).

Table 31: Important functions of PIs (meta-category)

Category	Examples (from survey responses)
Strategic planning	'PIs are important for strategy planning.' (2, 81)[8]
	'Performance indicators have an optimising effect when they are aligned with the university's strategic goals in terms of teaching and learning and translated into appropriate measures.' (2, 115)
Quality improvement/quality assurance	'The PIs presented by QA agencies are drivers for focusing HEI's internal QA and hence teaching and learning practices in that direction.' (2, 100)
	'They [the PIs] encourage the "quality culture" – continuous attention on and reflection on the quality of the programme.' (2, 104)
	'PIs can be very useful in providing the data for further investigation (e.g. on attainment gaps) as long as they don't become blunt tools and add extra pressure to teaching staff.' (2, 108)
Establish benchmarks	PIs 'make it possible to establish internal and external benchmarks and to analyse their evolution.' (2, 260)
Identify good practice examples	No compact, easy-to-read example available
Accountability	'They [the PIs] are important for accountability – to signal where something may be not going very well, and where action is needed.' (2, 104)
Control	PIs 'are more aligned to control mechanisms for the institution than indicators of good learning.' (2, 93)
Marketing (external presentation and advertisement)	'The use of performance indicators of learning and teaching would enable […] useful information for marketing the study programmes.' (1, 77)

A final meta-category addressed by the survey full-text responses is named "PIs' role in decision-making" (Table 32). As already mentioned above, respondents hardly wrote anything about mechanisms how PIs of L&T influence decision-making processes in higher education. Instead, they mentioned important organisational functions of PIs (Table 31) and their general roles in decision-making (Table 32).

With respect to the latter aspect respondents express the following three basic claims

- PIs are indispensable for decision-making

- PIs are supportive of decision-making

- PIs are dispensable for decision-making

From a perspective that is positive about the use of PIs, it may be particularly interesting to take a closer look at the third claim: PIs are dispensable for decision-making (in higher education L&T). The respondents who hold this view express their doubts or mistrust that PIs can help improve L&T. Instead, PIs are more aligned to institutional control mechanisms of leadership than on developing good learning, they say. Even worse, for some respondents, PIs 'obscure rather than reveal the reality of provision'. PIs are an integrative part and expression of 'managerialism and instrumentalism' which are 'currently damaging the culture of higher education everywhere'. Furthermore, PIs favour higher education institutions that are able to strongly select their intake of students. According to these criticisms, the only promising way to improve L&T processes and outcomes must be grounded in peer review of critical friends that relies on immediate interaction of peer teachers and peer students and their critical reflection of L&T processes. Obviously, the somewhat blanket accusation of managerialism and intellectualism connected to PI usage should be further clarified.

---

[8] These numbers in brackets are project-internal code numbers.

Table 32: PIs' role in decision-making (meta-category)

Category	Definition[9]	Examples (from survey responses)
PIs are indispensable for decision-making	Qualitative and quantitative PIs are indispensable for building evidence-informed ordered preferences of performance assessments and therefore decision-making in higher education.[10]	'Well-selected PIs (according to current needs, profile, visions etc.) are indispensable to generate evidence-informed assessments about an organisation's performances. Therefore, relevant and reliable PI-information and data are required for any organisational improvement.' (1, 3)[11] 'Decision-making is a timely extended process based on information gathering, conceptual ordering and assessments which, ideally, ends with a list of ordered preferences. If performances shall be assessed, such decision process requires qualitative and/or quantitative performance indicators. This does not imply the assumption that decision processes are always completely rationalised in the described sense. Instead, there may frequently occur […] irrational elements (e.g. imperfect analysis, unclear preferences, ambiguities, dilemmas) that set limitations to rational decisions that cannot in general be overcome by the use of performance indicators only.' (2, 3)
PIs are supportive of decision-making	PIs are supportive of building evidence-informed ordered preferences of performance assessments and therefore decision-making in higher education.	PIs 'can provide a sound basis for analysis and discussion.' (2, 13) PIs help to form the 'ability to more efficiently convince the actors and decision-making bodies to permanently enhance quality of education.' (2, 16) '[…] The improvement of decision-making depends on various performance indicators, which shall be taken into consideration.' (2, 47) 'PIs may be looked upon as a management tool, but you should be careful not overemphasising the importance of PIs. Although it may seem as a more controllable and just method of making decisions a university must be able to include both students and staff that do not adhere to a strict PI system. Which in itself may be counterproductive when it comes to new ideas, entrepreneurship etc.' (2, 54) 'The performance indicators mostly help decision-makers to make some critical judgement on the institutions internal activities and ways to improve and enhance their quality in relation to their staff and students, but also other stakeholders (e.g. graduates, employers).' (2, 57) PIs are supportive (for decision-making) 'when being used in a "holistic" way (in the sense of an analytical model, in which relations between different indicators are conceptualised in a comprehensive way)' (2, 63) 'Quantitative performance indicators can support decision-making but taking the context and qualitative performance indicators/aspects etc. into account is eagerly important to prevent narrow-minded and myopic decision-making.' (2, 69) 'If performance indicators are representative of actions and results, at all levels, they allow a better understanding of reality and its evolution and are therefore very relevant and crucial data for decision-making.' (2, 76) 'Performance indicators allow for evaluating previous strategies and policies, which in turn can inform future decisions.' (2, 77)
PIs are dispensable for decision-making	PIs are not needed for building evidence-informed ordered preferences of performance assessments and therefore decision-making in higher education.	'Not sure that performance indicators improve teaching and learning. They are more aligned to control mechanisms for the institution than indicators of good learning.' (2, 93) 'Most of them [PIs] don't [improve decision-making] – they obscure rather than reveal the reality of provision. […] The best way to judge the quality of learning and teaching provision is by a) independent inspection of the course, its materials, and associated enrichment programmes, and b) independent observation of teaching practices. By "independent", I mean well-informed colleagues, from another HE institution, with expertise in the relevant field, who would act as critical friends (much as External Examiners are), with a duty of care BOTH to students and teaching staff.' (2, 101) 'Most often they [PIs] do not [improve decision-making].' (2, 180) 'Managerialism and instrumentalism are the major problems currently damaging the culture of higher education everywhere. Many performance indicators give skewed results, because they favour those institutions that are able to be most selective in their intake of students.' (1, 101)

---

[9] If needed, the coding rules are given by a selection of words or phrases from the definition or synonymous expressions.
[10] A few examples of decision-making in L&T are admission of students; recruiting of teachers; evaluation decisions on study programmes and courses; informing (individual) students on the basis of Learning Analytics data etc.
[11] These numbers in brackets are project-internal code numbers.

Overall, it should not be overlooked that some full-text answers to the SQELT survey could not be taken into account in the analysis because they did not answer either of the two questions (which does not mean that the answers were incorrect).

Summary

Overall, the above analysis and interpretation of the responses to the SQELT online survey about the assessed importance of a selection of PIs from the comprehensive SQELT PI set shows that a majority of selected PIs are considered important and very important by majorities of respondents. In this sense, the analysis can be read directly as a confirmation of the high importance of these PIs. These considerations apply to all PI areas and to all stakeholder groups' assessments with only minor relative deviations.

In general terms, it can be claimed that the perceived importance of the assessed PIs belonging to both 'Teaching competences and processes' and 'Learning competences and processes' domains is higher compared to the other two L&T domains, the areas of 'Learning outcome and learning gain and their assessment' and 'L&T environment'. Among the four L&T domains, the PIs from the 'L&T environment' area seem to be perceived as the least important. At the same time, it is worth noting that for the 44 investigated PIs in the SQELT survey no median was below 3 (on the 5-point Likert scale 'completely unimportant', 'unimportant', 'important', 'very important' and 'extremely important'). This means that the subset of PIs selected for the survey represents items that are assessed at least 'important' by majorities of respondents.

As usual the full-text answers bring to the fore a broader spectrum of opinions among them positive attitudes towards PIs but also critical attitudes towards PI usage and even strong rejection. In particular, the latter exemplify exploratory issues and would require further and deeper analysis of the reasoning underlying the criticisms. An example is the claim that PI usage implies "managerialism" and "instrumentalism" and thus damages the culture of higher education.

Finally, it should be noted that the used survey questionnaire could only address 44 of more than 800 PIs of the SQELT comprehensive Performance Indicator Set. For different choices of subsets from the comprehensive PI set different responses may result.

Appendix: Evaluation Survey on the SQELT Comprehensive PI Set

In the following, the evaluation survey on the SQELT PI set is presented in its paper-based form. This survey was applied online to collect assessments of various stakeholders on a selection of PIs that was taken from the SQELT comprehensive PI set (see SQELT-MIO, 2020).

Goal and Privacy Policy of the Survey

The partners of the **Erasmus+ Strategic Partnership SQELT** ("Sustainable Quality Enhancement in Higher Education Learning and Teaching"; https://www.evalag.de/sqelt/) would like to kindly invite you to participate in this survey about **performance indicators in higher education learning and teaching**. The survey will take approximately 20-30 minutes.

Through this survey the Erasmus+ Strategic Partnership SQELT would like to gather various stakeholders' assessments about a selected subset of a larger comprehensive set of performance indicators that was developed in the SQELT project between 2017 and 2020. The survey results will be used for academic purposes only as a feedback to the SQELT performance indicator set. All collected data will be treated as confidential and in anonymised form and will not be processed for other purposes than those mentioned above. Information and data handling is carried out in accordance with the GDPR. Particularly, collected data will not be kept for longer than is necessary for data evaluation and interpretation.

We kindly ask you to respond no later than **15 October 2020**.

Once you have submitted your response, you will be able to download a copy for your own records.

If you have any questions or doubts, please contact Prof. Dr. Dr. Theodor Leiber (coordinator of Erasmus+ project SQELT) at: Evaluationsagentur Baden-Württemberg, M7 9a-10, D-68161 Mannheim, Germany or leiber@evalag.de

Section A: General Questions about Your Affiliation

A1. **Please name your organisation where you work or study (e.g. university, quality assurance agency or European higher education network):**

…….

A2. **Please name the country where your organisation is situated:**

…….

A3. **To which of the following stakeholder groups do you belong? (multiple answers possible)**

□ Student

□ Teacher of higher education institution

□ Leadership of higher education institution (e.g. member of rectorate; dean etc.)

□ Quality management of higher education institution (internal quality management)

□ Professional of quality assurance agency (external quality management)

□ Professional of European higher education network (e.g. ENQA, ESU, EUA, EURASHE)

□ Education politics

□ Other

A3. **Please name your position in your organisation, if applicable:**

………..

Section B: Performance Indicators of Teaching Competences and Processes

In your view, how important are the following performance indicators for the quality management of learning and teaching in higher education?

	Extremely important	Very important	Important	Unimportant	Completely unimportant	No answer
TEACHING STAFF WORKLOAD (e.g. official commitment of teaching hours per semester week, number of teaching hours per semester week, number of courses)	□	□	□	□	□	□
PROPORTION OF TEACHING STAFF WHO PARTICIPATED IN PEDAGOGICAL TRAINING	□	□	□	□	□	□
QUALITY OF RECRUITMENT PROCEDURES FOR LECTURERS/ASSOCIATE PROFESSORS/FULL PROFESSORS (e.g. procedural responsibilities; recruitment and selection process; recruitment quality criteria)	□	□	□	□	□	□
NUMBER and/or PERCENTAGE OF REFEREED PUBLICATIONS during a certain time period (e.g. three years) per FTE (full-time-equivalent) member of teaching staff and/or per subject field and/or per study programme	□	□	□	□	□	□

TEACHING STAFF'S DIDACTICS COMPETENCES and PEDAGOGICAL KNOWLEDGE and SKILLS	☐	☐	☐	☐	☐	☐
TEACHING STAFF'S FEEDBACK TO STUDENTS (e.g. on work in progress, tests, completed assignments)	☐	☐	☐	☐	☐	☐
QUALITY OF TEACHING COURSES (e.g. embedding of courses in curriculum, meaningful course structures, options for participation, imparting knowledge and skills, preparedness of teacher)	☐	☐	☐	☐	☐	☐
NUMBER and/or PERCENTAGE OF PHASES OF PRACTICAL EXPERIENCE PER BACHELOR PROGRAMME (e.g. work experience, internships, external projects)	☐	☐	☐	☐	☐	☐
NUMBER and/or PERCENTAGE OF PHASES OF PRACTICAL EXPERIENCE PER MASTER PROGRAMME (e.g. work experience, internships, external projects)	☐	☐	☐	☐	☐	☐
NUMBER and/or PERCENTAGE OF PHASES OF PRACTICAL EXPERIENCE PER DOCTORAL/PhD PROGRAMME (e.g. work experience, internships, external projects)	☐	☐	☐	☐	☐	☐

Section C: Performance Indicators of Learning Competences and Processes

In your view, how important are the following performance indicators for the quality management of learning and teaching in higher education?

	Extremely important	Very important	Important	Unimportant	Completely unimportant	No answer
STUDENT WORKLOAD (e.g. number of learning hours per semester week, number of courses)	☐	☐	☐	☐	☐	☐
AVERAGE DURATION PER STUDENT INTERACTION WITH COURSE ACTIVITIES (e.g. solution of exercises, watching videos, listening to lecture, participation in working groups, etc.)	☐	☐	☐	☐	☐	☐
STUDENTS' DISPOSITIONS, VALUES AND ATTITUDES TOWARDS LEARNING (measured on the basis of learner data and pedagogical descriptors, e.g. learning-related emotions such as enjoyment, curiosity, frustration, anxiety; ability in deactivating negative learning emotions; learning strategies)	☐	☐	☐	☐	☐	☐
STUDENTS' COMPETENCES WITH RESPECT TO LEARNING and SELF-DIRECTED LEARNING (SDL) (e.g. students' knowledge and understanding of learning theories, own learning processes, problem-based learning, research-based learning, internships, online learning, mobile learning, blended learning)	☐	☐	☐	☐	☐	☐
OVERALL QUALITY OF STUDENT LEARNING EXPERIENCE	☐	☐	☐	☐	☐	☐

Section D: Performance Indicators of Learning Outcomes and Learning Gain and Their Assessment

In your view, how important are the following performance indicators for the quality management of learning and teaching in higher education?

	Extremely important	Very important	Important	Unimportant	Completely unimportant	No answer
PERCENTAGE OF CREDIT POINTS AWARDED IN SERVICE-LEARNING ACTIVITIES (e.g. students in community service activities and social work) in relation to total number of credit points	□	□	□	□	□	□
NUMBER and/or PERCENTAGE OF STUDENTS WHO DID NOT COMPLETE THE FIRST YEAR OF STUDY	□	□	□	□	□	□
NUMBER and/or PERCENTAGE OF STUDENTS WHO DID NOT COMPLETE THE UNDERGRADUATE PROGRAMMES WITHIN THE PLANNED PROGRAMME DURATION (Bachelor graduation on time)	□	□	□	□	□	□
NUMBER and/or PERCENTAGE OF STUDENTS WHO DID NOT COMPLETE THE GRADUATE PROGRAMMES WITHIN THE PLANNED PROGRAMME DURATION (Master graduation on time)	□	□	□	□	□	□
STUDENT ATTRITION (DROP-OUT) (per year per higher education institution and/or per subject field and/or per department/institute and/or per study programme)	□	□	□	□	□	□
NUMBER and/or PERCENTAGE OF BACHELOR STUDENTS PERFORMING AN INTERNSHIP (per higher education institution and/or per subject field and/or department/institute and/or study programme)	□	□	□	□	□	□
NUMBER and/or PERCENTAGE OF BACHELOR GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION (e.g. six months and/or one year) ARE UNEMPLOYED (per higher education institution and/or per subject field and/or department/institute and/or study programme)	□	□	□	□	□	□
NUMBER and/or PERCENTAGE OF BACHELOR GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION (e.g. six months and/or one year) ARE INVOLUNTARILY EMPLOYED IN AN OCCUPATION WITH A QUALIFICATION FRAMEWORKS LEVEL BELOW THE ATTAINED LEVEL (per higher education institution and/or per subject field and/or department/institute and/or study programme)	□	□	□	□	□	□
NUMBER and/or PERCENTAGE OF MASTER GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION (e.g. six months and/or one year) ARE UNEMPLOYED (per higher education institution and/or per subject field and/or department/institute and/or study programme)	□	□	□	□	□	□
NUMBER and/or PERCENTAGE OF MASTER GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION (e.g. six months and/or one year) ARE INVOLUNTARILY	□	□	□	□	□	□

EMPLOYED IN AN OCCUPATION WITH A QUALIFICATION FRAMEWORKS LEVEL BELOW THE ATTAINED LEVEL (per higher education institution and/or per subject field and/or department/institute and/or study programme)						
NUMBER and/or PERCENTAGE OF DOCTORAL/PhD GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION (e.g. six months and/or one year) ARE UMEMPLOYED (per higher education institution and/or per subject field and/or department/institute and/or study programme)	□	□	□	□	□	□
NUMBER and/or PERCENTAGE OF DOCTORAL/PhD GRADUATES WHO WITHIN A CERTAIN TIME PERIOD AFTER GRADUATION (e.g. six months and/or one year) ARE INVOLUNTARILY EMPLOYED IN AN OCCUPATION WITH A QUALIFICATION FRAMEWORKS LEVEL BELOW THE ATTAINED LEVEL (per higher education institution and/or per subject field and/or department/institute and/or study programme)	□	□	□	□	□	□
STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO SUBJECT-MATTER COMPETENCES (e.g. final grades; assessments of individual exams and performances such as presentations, homework, workshops within study courses and study modules)	□	□	□	□	□	□
STUDENTS' LEARNING GAIN IN HIGHER EDUCATION FOR SUSTAINABILITY DEVELOPMENT (HESD) COMPETENCES (e.g. according to the UNESCO's 17 Sustainability Development Goals)	□	□	□	□	□	□
STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO METHODOLOGICAL COMPETENCES (e.g. final grades; assessments of individual exams and performances such as presentations, homework, workshops within study courses and study modules)	□	□	□	□	□	□
STUDENTS' LEARNING GAIN IN REFLECTIVE COMPETENCES (e.g. systemic thinking, forward thinking, critical thinking, self-perception competence)	□	□	□	□	□	□
STUDENTS' LEARNING GAIN IN LEARNING STRATEGIES AND SELF-LEARNING COMPETENCES (e.g. knowledge of learning theories and practice; collaborative learning)	□	□	□	□	□	□
STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO QUANTITATIVE REASONING (e.g. knowledge and skills of mathematical and statistical methodologies)	□	□	□	□	□	□
STUDENTS' EXAMINATION and ASSESSMENT RESULTS WITH RESPECT TO INTERDISCIPLINARY COMPETENCES (e.g. ability to combine and synthesize knowledge and methodologies from different disciplines)	□	□	□	□	□	□
STUDENTS' LEARNING GAIN WITH RESPECT TO SOCIAL COMPETENCES (e.g. team, communication and leadership competences; empathy; ability to cooperate; ability to solve conflicts)	□	□	□	□	□	□

STUDENTS' LEARNING GAIN WITH RESPECT TO SELFCOMPETENCES (e.g. self-determination; capability of decision and learning; flexibility of action; ability to reflect; sovereignty)	☐	☐	☐	☐	☐	☐
OVERALL QUALITY OF STUDY EXPERIENCE DURING THE STUDENT LIFE CYCLE	☐	☐	☐	☐	☐	☐

Section E: Performance Indicators of Learning and Teaching Environment

In your view, how important are the following performance indicators for the quality management of learning and teaching in higher education?

	Extremely important	Very important	Important	Unimportant	Completely unimportant	No answer
NUMBER and/or PERCENTAGE OF STUDENTS WITH NONTRADITIONAL BACKGROUND (exemplary criteria include low-income; non-academic families; disadvantaged ethnic and religious groups) (per higher education institution and/or per department/institute and/or per subject field and/or study programme)	☐	☐	☐	☐	☐	☐
NUMBER and/or PERCENTAGE OF STUDENTS WHO USE NETWORKING OPTIONS PROVIDED BY THE HIGHER EDUCATION INSTITUTION THAT MEET THEIR STUDY INTERESTS (e.g. student research groups)	☐	☐	☐	☐	☐	☐
NUMBER and DURATION OF STUDENT INTERACTIONS WITH TEACHING STAFF IN THE CLASSROOM (per semester or study period)	☐	☐	☐	☐	☐	☐
NUMBER and DURATION OF STUDENT INTERACTIONS WITH TEACHING STAFF ON DIGITAL PLATFORMS (per semester or study period)	☐	☐	☐	☐	☐	☐
NUMBER and DURATION OF STUDENT INTERACTIONS WITH TEACHING STAFF DURING ADDITIONAL ACTIVITIES (e.g. research work, research camps, consultations, conferences) (per semester or study period)	☐	☐	☐	☐	☐	☐
STUDENTS' ENTRANCE GRADES (per study programme)	☐	☐	☐	☐	☐	☐
STUDENTS' GRADES OF INTRODUCTORY COURSES and/or EXAMINATIONS (e.g. in mathematics, languages) (per study programme)	☐	☐	☐	☐	☐	☐

Section F: Two Final Questions about Your Assessment of the Role of Performance Indicators

F1. **Which challenges and opportunities do you see when using performance indicators of learning and teaching at/by your institution (e.g. in quality assessments/evaluations; accreditation; benchmarking/classification; decision-making), if applicable? [max. 2000 characters]**

…………………………………………………………………………………………………….

……….

……….

F2. **In your view, in which ways do performance indicators improve decision-making in higher education? [max. 2000 characters]**

……….

Thank you very much for the time to respond. Please click on the Submit button to submit your answers.

References

Barbato, G., Bugaj, J., Campbell, D., Cerbino, R., Ciesielski, P., Feliks, A., Milani, M., and Pausits, A., 2021, 'Performance indicators in learning and teaching quality: Lessons from a European research project' (working title). (in preparation)

Beerkens, M., 2021, 'Evidence-informed steering in higher education: From performance indicators to "Big Data"' (working title). (in preparation)

Huisman, J., and Stensaker, B., 2021, 'Performance governance and management in higher education revisited: International developments and perspectives' (working title). (in preparation)

Leiber, T., 2019a, 'A general theory of learning and teaching and a related comprehensive set of performance indicators for higher education institutions.' *Quality in Higher Education* 25 (1), pp. 76–97.

Leiber, T., 2019b, 'Organizational change and development through quality management in higher education institutions: theory, practice, and recommendations for change agents.' In: Robert G. Hamlin, Andrea D. Ellinger, and Jenni Jones (eds.) (2019) *Evidence-Based Initiatives for Organizational Change and Development*. Hershey: IGI Global, pp. 316-341

Leiber, T., 2020, 'Performance data governance and management in learning and teaching: Basic elements and desiderata in the light of a European case study.' Documentation of the 2019 Annual Meeting of the German Society for Higher Education Research (GfHf). Available at www.gfhf2019.de (accessed 30 November 2020).

Leiber, T., 2021, 'Justifying, contextualising and operationalising performance indicators of learning and teaching: The role of theories and practice of learning and teaching' (working title). (in preparation)

Mayring, P., 2000, 'Qualitative content analysis' [28 paragraphs], *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* 1(2), Art. 20. Available at http://nbn-resolving.de/urn:nbn:de:0114-fqs0002204 (accessed 11 November 2020).

Mayring, P., 2020, 'Qualitative Content Analysis: Demarcation, Varieties, Developments' [30 paragraphs]. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* 20(3), Art. 16. Available at https://www.qualitative-research.net/index.php/fqs/article/view/3343/4557 (accessed 11 November 2020).

Pohlenz, P., 2021, 'Innovation, professionalisation and evaluation in academic teaching and student learning: Implications and impact on quality management in learning and teaching' (working title). (in preparation)

Rosa, M.J., Williams, J., Claeys, J., Kane, D., Bruckmann, S., Costa, D., and Rafael, J., 2021, 'Learning analytics and data ethics in performance data management: A benchlearning exercise involving six EU universities' (working title). (in preparation)

Sarrico, C., 2021, 'Quality management, performance measurement and indicators in higher education institutions: Between burden, innovation and inspiration' (working title). (in preparation)

SQELT [Sustainable Quality Enhancement in Higher Education Learning and Teaching], 2020, 'Sustainable quality enhancement in higher education learning and teaching. Integrative core dataset and performance data analytics.' Erasmus+ Strategic Partnership. Available at https://www.evalag.de/sqelt (accessed 30 November 2020).

SQELT-MIO, 2020, 'SQELT Main Intellectual Outputs.' Erasmus+ Strategic Partnership. Available at https://www.evalag.de/en/research/sqelt/intellectual-outputs/ (accessed 30 November 2020).