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remote online assessments
in higher education

Evaluation Study of Stakeholder Perspectives on Online Assessment

Report on IO2

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<https://remote-edu.ili.eu/>

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The work presented here relies heavily on elements of the Remote.EDU project.

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Introduction

The aim of the second intellectual output (IO2) was to explore, analyse and report the perceptions of instructors, students, and administrators (stakeholders) about online assessment within the partner institutions. This way it would be possible to draw on the current situation in each of the institutions to consider local, institutional, and national perspectives.

Considering that all stakeholders have by now some kind of experience with online assessment, it is cornerstone to collect those experiences in an empirical way, to use them in the developments planned in this project. So far not too much information on this topic has been collected beyond theoretical perspectives, anecdotal records, and small-scale studies.

The impact expected is especially on the developments to be prepared (IO3 and IO5) and the awareness on the current situation from the stakeholders' perspectives based on the large-scale institutional exposure to online assessment.

Method

Process

The work within this IO2 has included different phases (see Figure 1).

First, we designed the surveys for each stakeholder based on the framework for online assessment (see [Report IO1](#)). The UdL team worked on different draft versions of the surveys and then discussed them with all the partners. After final revisions, the English versions of the surveys were ready to be translated into official languages – if needed – and to be developed in each institution' survey platform.

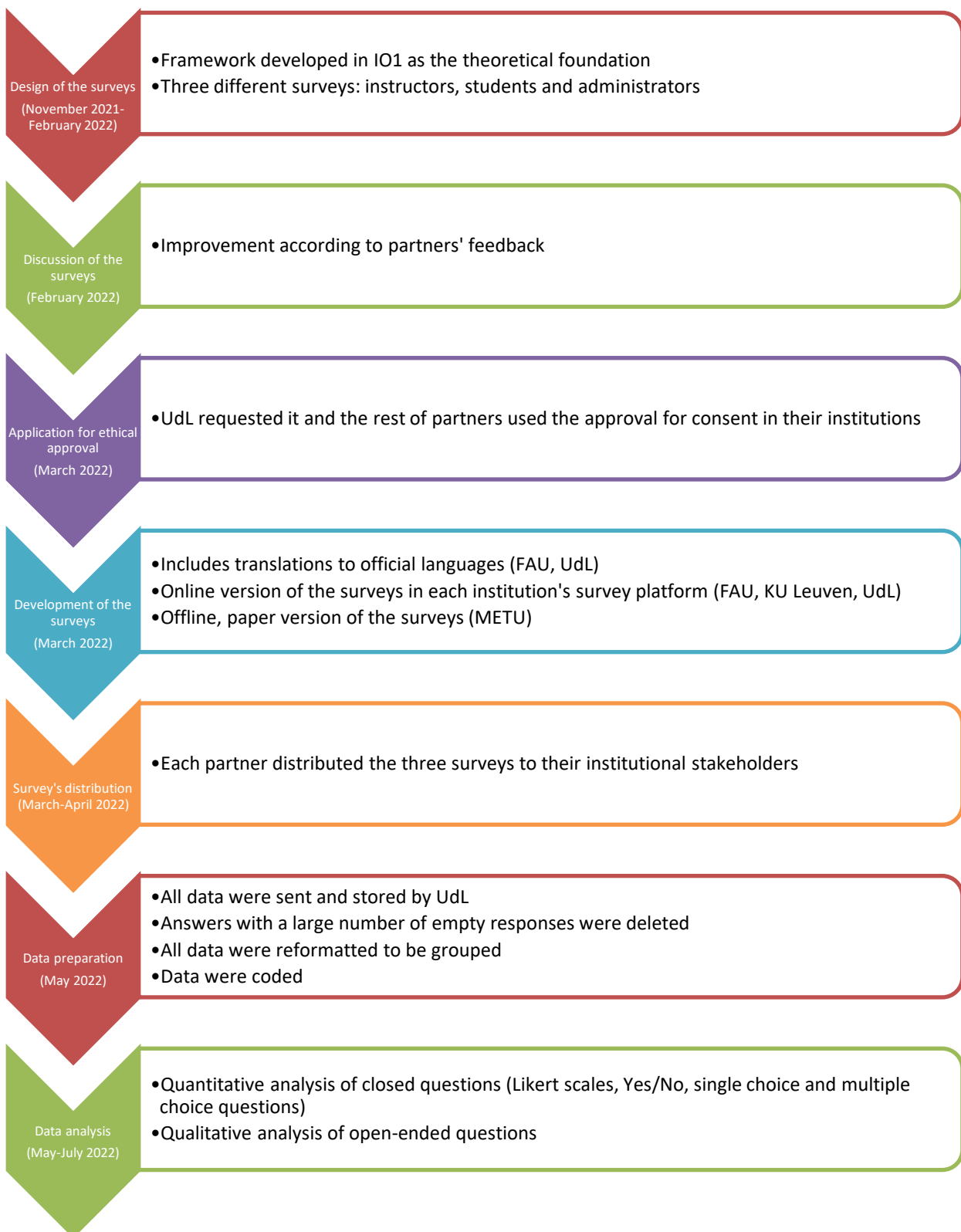
However, before the surveys' distribution, ethical approval was requested, since data collection from humans requires it in all the institutions involved. After ethical approval was obtained¹, each partner distributed the surveys either online or offline, in paper.

All data was sent to UdL for their preparation for analysis, which included both quantitative (descriptive statistics' analysis) and qualitative analysis (thematic analysis).

In the next sections, we detail some of those phases.

¹The study was qualified evaluated as favourable by the Research and Transfer Ethics Committee (CERT) of the UdL (protocol code PO 019).

Figure 1. Phases of IO2.



Design of the surveys

The final versions of the three surveys in English language can be found in the [Report IO2 Supplementary Material](#).

The surveys have different components depending on the profile of the stakeholder, considering the framework for online assessment from IO1, being *support* and *technology* transversal elements:

- Macro-level factors: situational factors, regulations
- Meso-level factors: institutional policies and culture
- Micro-level factors: teacher-related factors and student-related factors

These three groups of factors impact, with different degrees of influence, the following elements related to instructors and students:

- Attitudes towards online assessment
- Practices of online assessment
- Preferences of online assessment

While the instructors' and students' surveys had items for all these components, with special focus on micro-level factors, attitudes, practices, and preferences; the administrators' survey put more emphasis on macro and meso-level factors, which also influence instructors' and students' attitudes, practices and preferences of online assessment, to a more or lesser degree.

Data preparation and analysis

The study involved an embedded mixed-methods design, which integrates the collection in parallel of quantitative and qualitative data through the same survey instrument, but giving more weight to the quantitative data and using the qualitative data to supplement the other part to explain and interpret them.

Since each institutional survey's platform allowed a different configuration of the surveys and generated an exported file with a different format, data homogenization was needed. This also included coding data for a smoother data analysis process. Each country dataset was coded with two letters indicating the country and the answer's number. Also, the code *Country* was added. The whole dataset was coded based on legend codes, depending on the number of answers for multiple choices and single choice (1, 2, 3...), yes/no answers (1/0), and Likert scales (1-5). After this process, all the data were imported to the statistical software analysis SPSS, where the codes were set manually. Descriptive statistics were calculated based on frequencies, mean and median (where relevant). These data were used to create different charts to visualize and interpret the findings.

Open-ended text answers were analysed based on thematic analysis. Categories were inductively developed per each item according to the answers, and in the case of some items that were the same in terms of content in the three surveys, the same categories to use for coding were agreed within the UdL team (four researchers). Each category was divided into codes that included the different answers related to each topic. Also, frequencies per each category and code were calculated. The coding process included different phases of revision of the codes and quotes, involving different members of the team to ensure reliability of the final coding system.

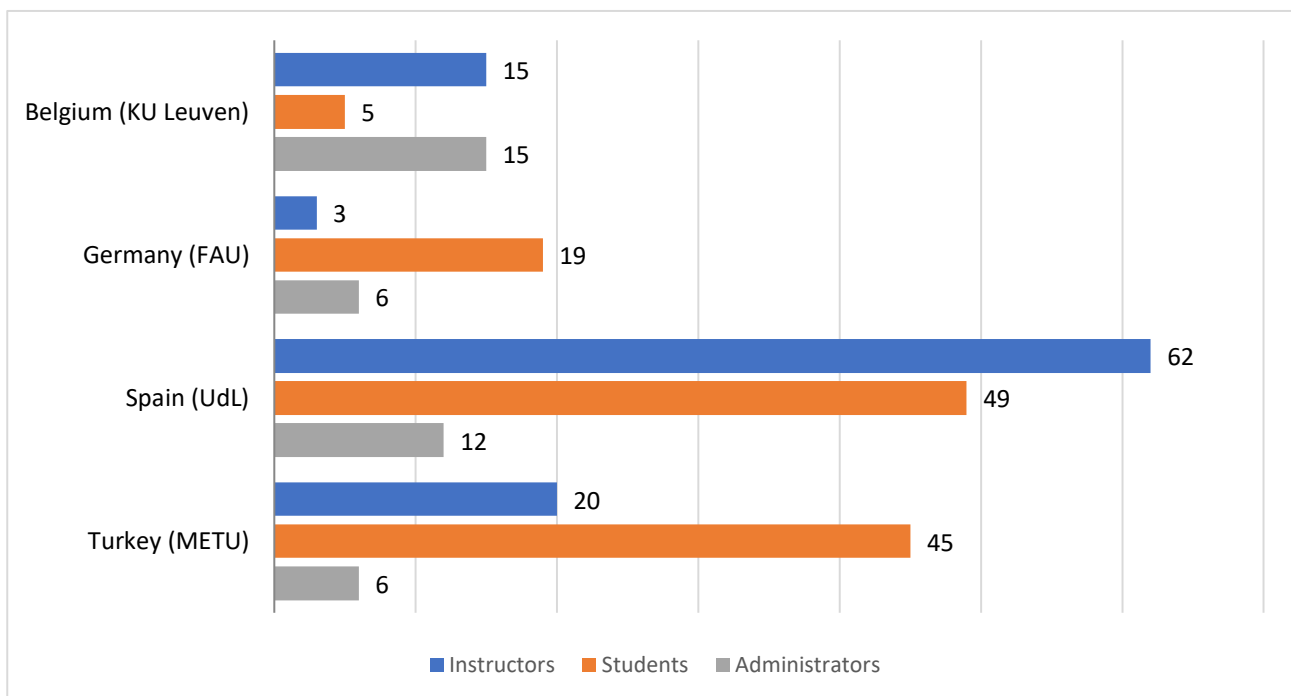
Results

Sample

The sample of the study was of 257 participants, formed by 100 instructors (38.9%), 118 students (45.9%) and 39 administrators (15.2%) from the four partner institutions (13.5% from KU Leuven, 10.8% from FAU, 47.5% from UdL and 27.4% from METU). The participant distribution of each stakeholder collective per country institution can be observed in Figure 2.

It is important to note that all four universities have a traditional, in-presence model for teaching and learning for most of the programs – with some exceptions of programs and/or courses that are delivered online.

Figure 2. Distribution of the sample according to country institution and stakeholder collective (N=257)



In the following pages, the results per stakeholders will be presented in this order: instructors, students, and administrators.

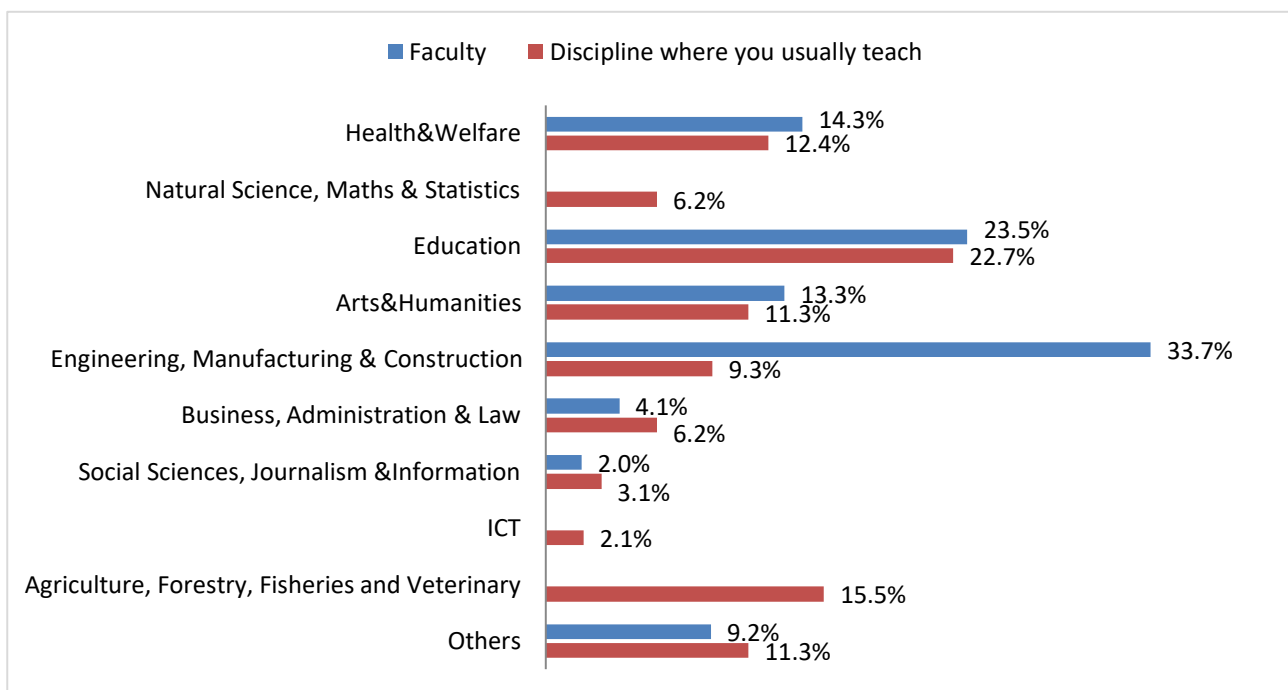
Instructors

Profile

All faculties and disciplines were represented (see Figure 3), with major presence of the faculties related to 1) Engineering, Manufacturing & Construction, 2) Education, 3) Health & Welfare, 4) Arts & Humanities.

The mean number of years of the teaching experience was 17 years, and the average teaching workload in an academic year was 22 ECTS. The approximate size of their classes is very variable, ranging from 9 to 400 students, and the mean is 59.7. Most of the instructors teach both at Bachelor and Master levels (55%).

Figure 3. Faculty and discipline of instructors (n=98)

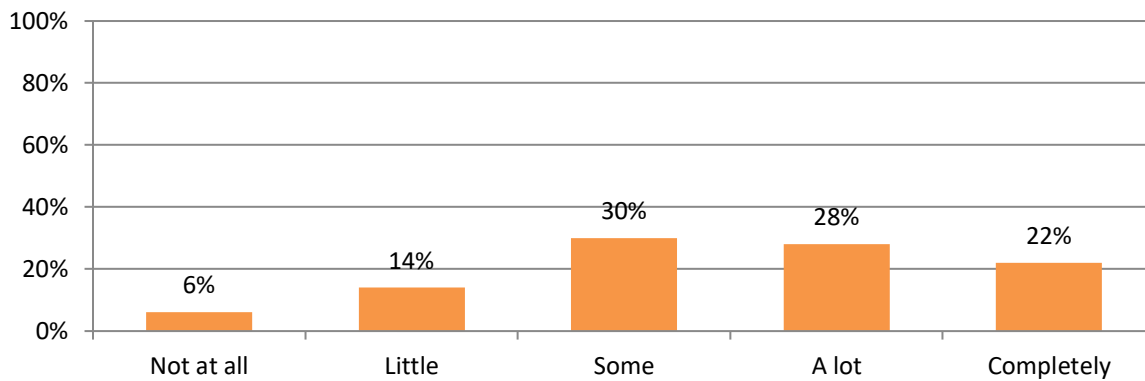


Factors associated: previous experience

61% of the instructors only had experience with online assessment after the pandemic. Out of the 39% instructors with previous experience before the pandemic, 60% had this experience outside an online postgraduate or degree. This experience mostly related to the use of different tools within the institutional LMS, especially the questionnaires/tests, but also tasks and forums, as reflected by a ES participant, *“Test exams are conducted through the Virtual Campus to assess practices and as a self-evaluation tool”*.

Most instructors feel familiar to a certain degree with the implementation of online assessment practices (see Figure 4).

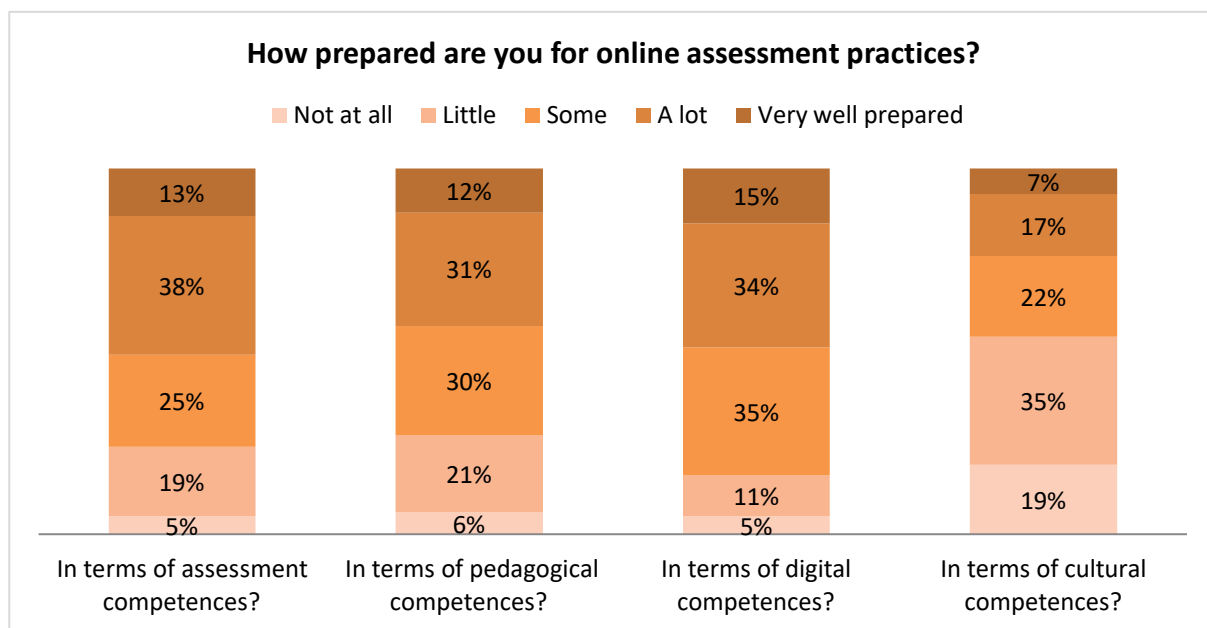
Figure 4. Familiarity with the implementation of online assessment practices (n=100)



Factors associated: competences

Instructors considered themselves to be fairly well prepared when looking at diverse competences involved in the development of online assessment practices. However, there is some room for improvement, especially in terms of cultural competences (see Figure 5).

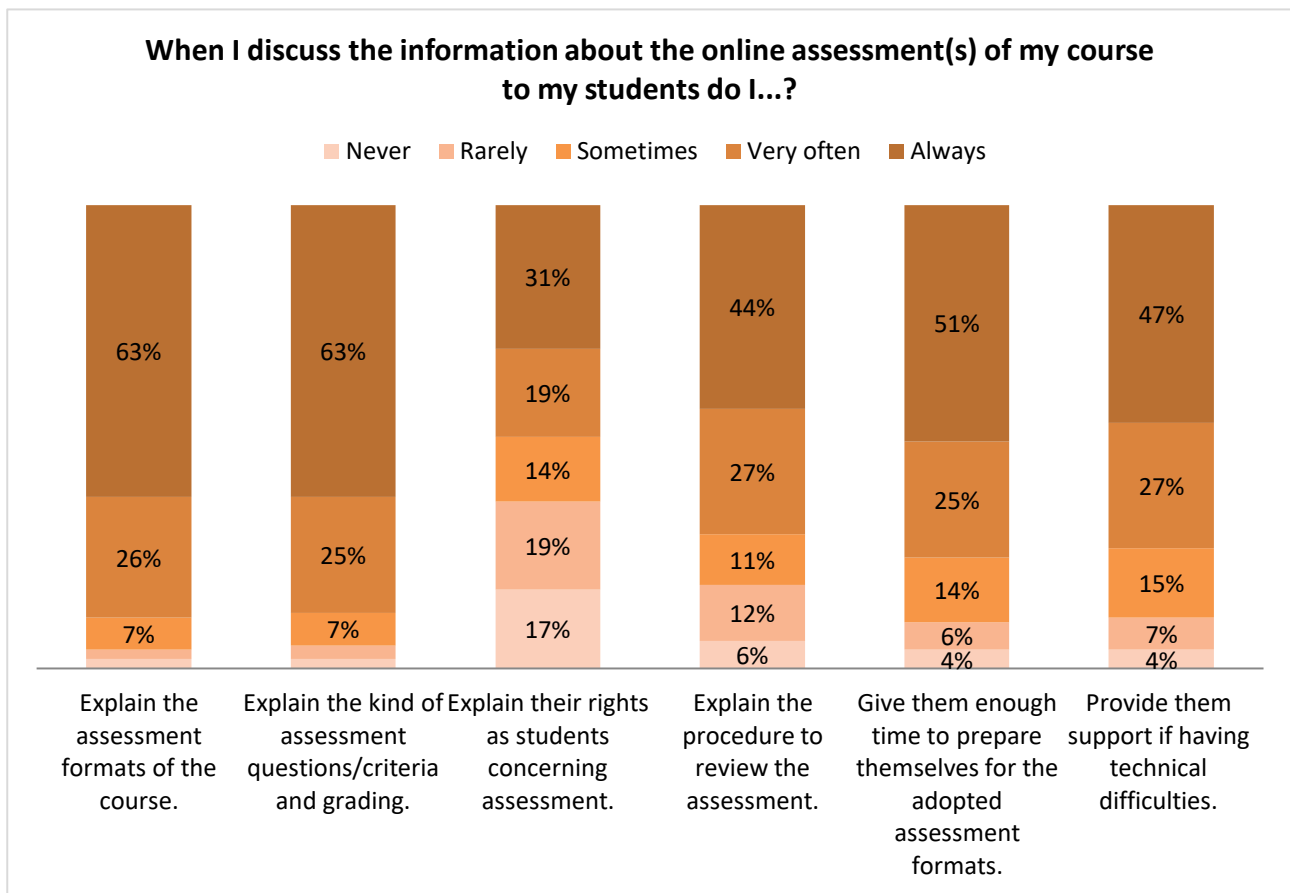
Figure 5. Instructors' competences for online assessment practices (n=96)



Factors associated: communication skills

Overall, instructors consider that they cover well different aspects with regard to the effective communication to students of the types and procedures of the online assessment in their courses (see Figure 6).

Figure 6. Instructors' communication skills regarding online assessment in their courses (n=96)



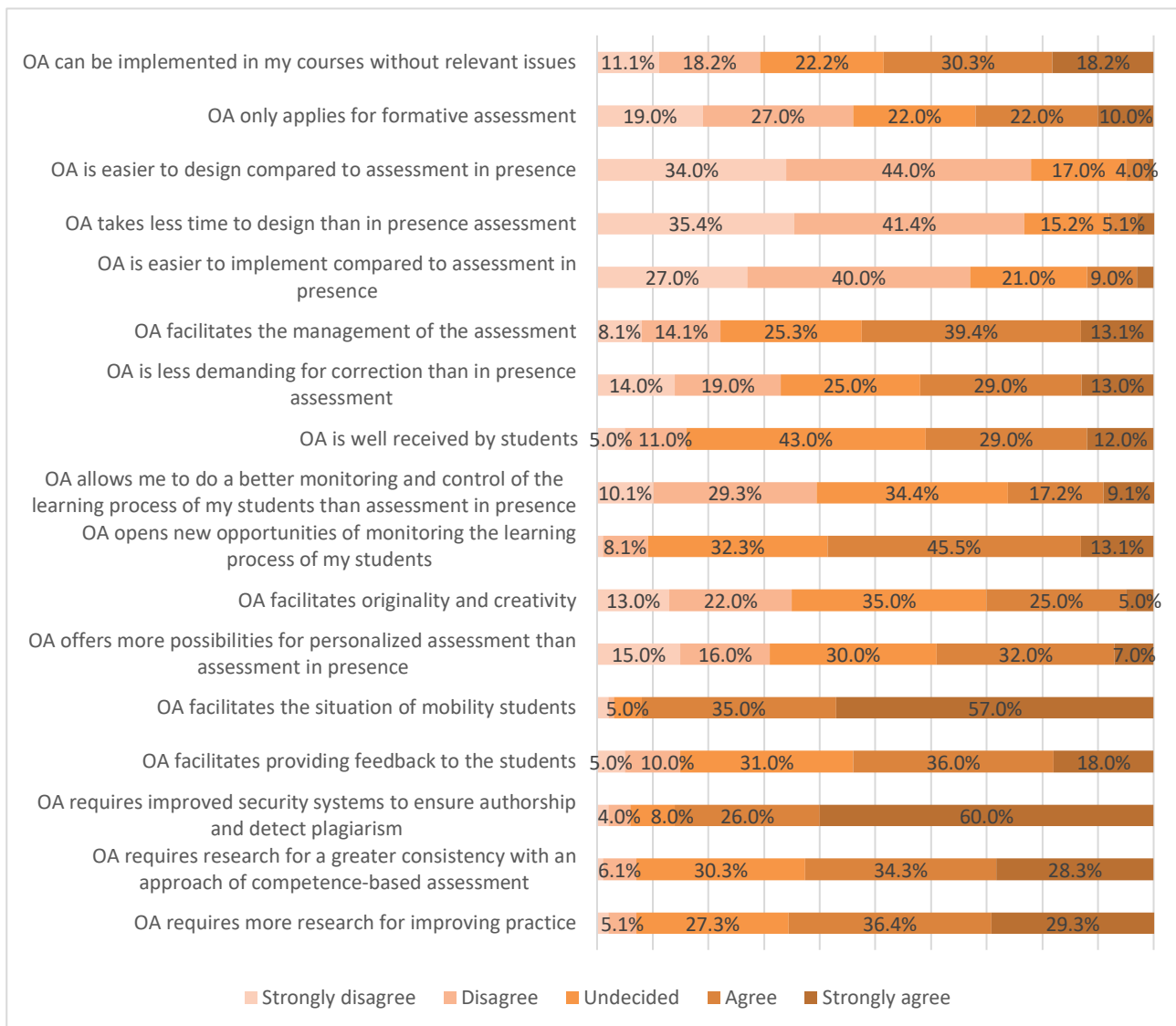
Attitudes

Concerning attitudes towards online assessment, a general indecision among instructors can be observed (see Figure 7), especially taking into account its reception by the students (43%), its facilitation of originality and creativity (35%) or its support for a better instructor's monitoring and control of the students' learning process (34.4%).

Nevertheless, positive attitudes can be identified when considering online assessment to facilitate the situation of mobility students (92%) and, to a lesser extent, to implement it in their courses without relevant issues (49.5%).

In addition, instructors consider that online assessment needs improved security systems to ensure students' ethical practices (86%) and further research for improving practice (65.7%).

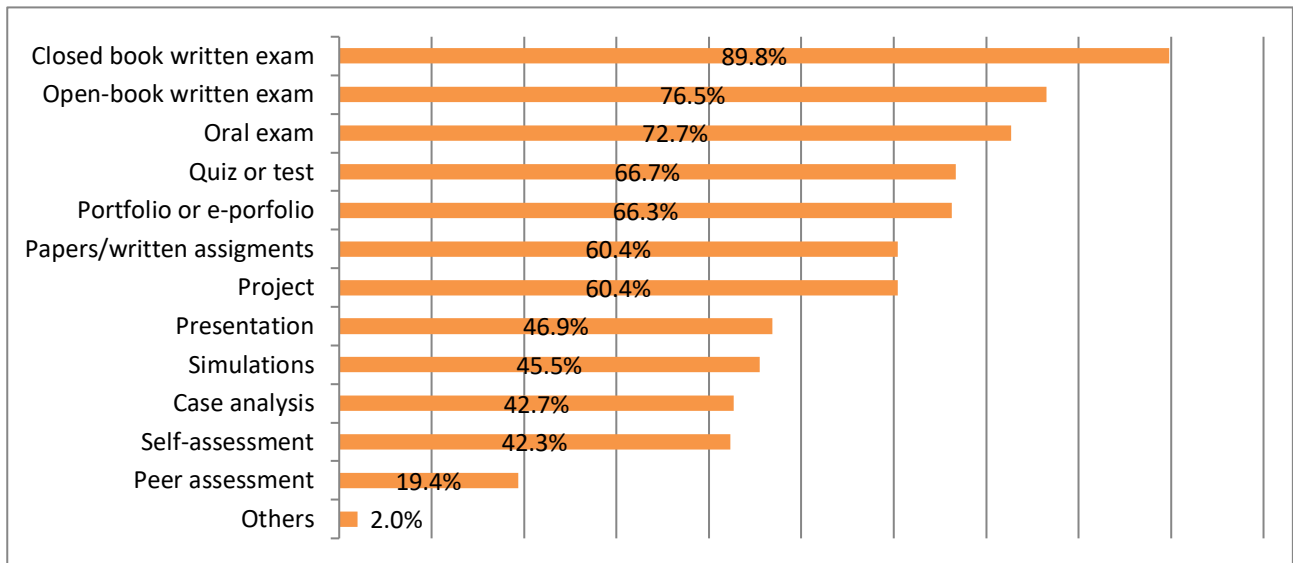
Figure 7. Instructors' attitudes towards online assessment (OA) (n=100)



Practices

Although most of the online assessment practices are known by the instructors to different extent (see Figure 8), practices in formative assessment and, especially in summative assessment, are rather limited.

Figure 8. Instructors' knowledge of online assessment practices (n=100)



In formative assessment, the actual use of online assessment practices is mostly, always, and very often, reduced to the use of papers/written assignments, quizzes or tests and presentations (see Figure 9).

In the case of summative assessment, the results are similar, but in general it shows a bleaker panorama (see Figure 10). Still, the use of quizzes or tests and papers/written presentations are the most popular ones.

Figure 9. Online assessment actual practices in formative assessment (n=90)

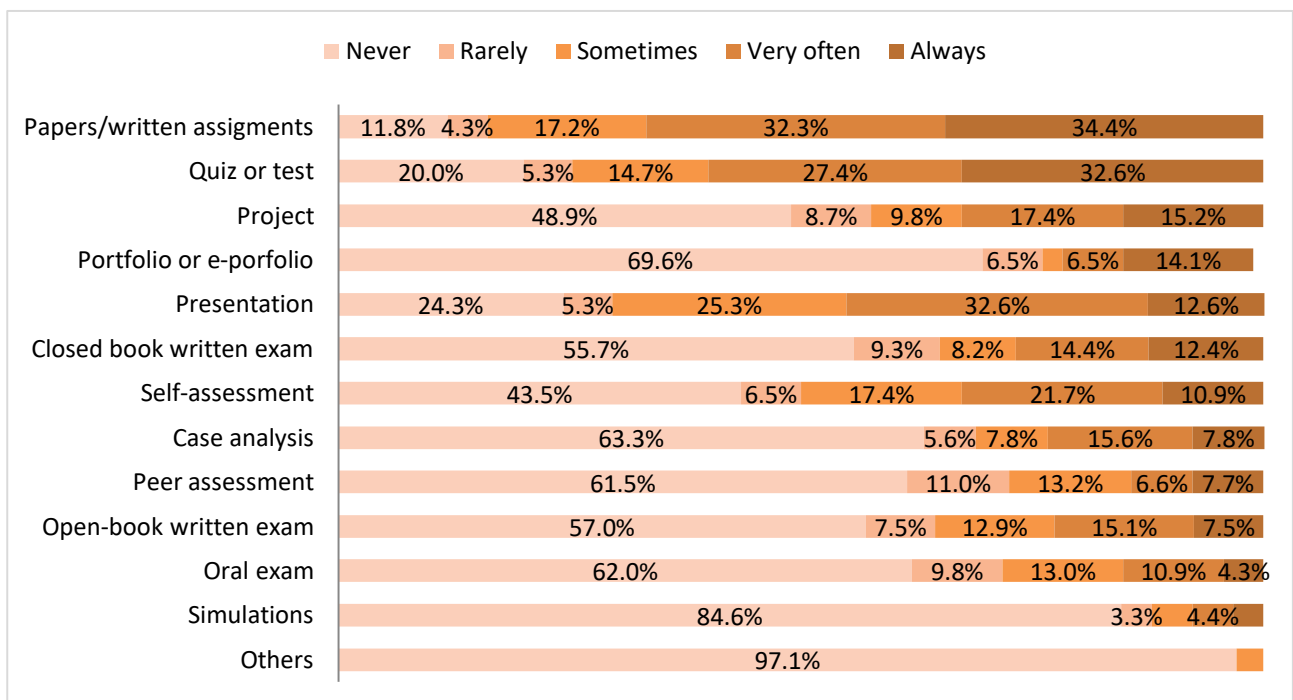
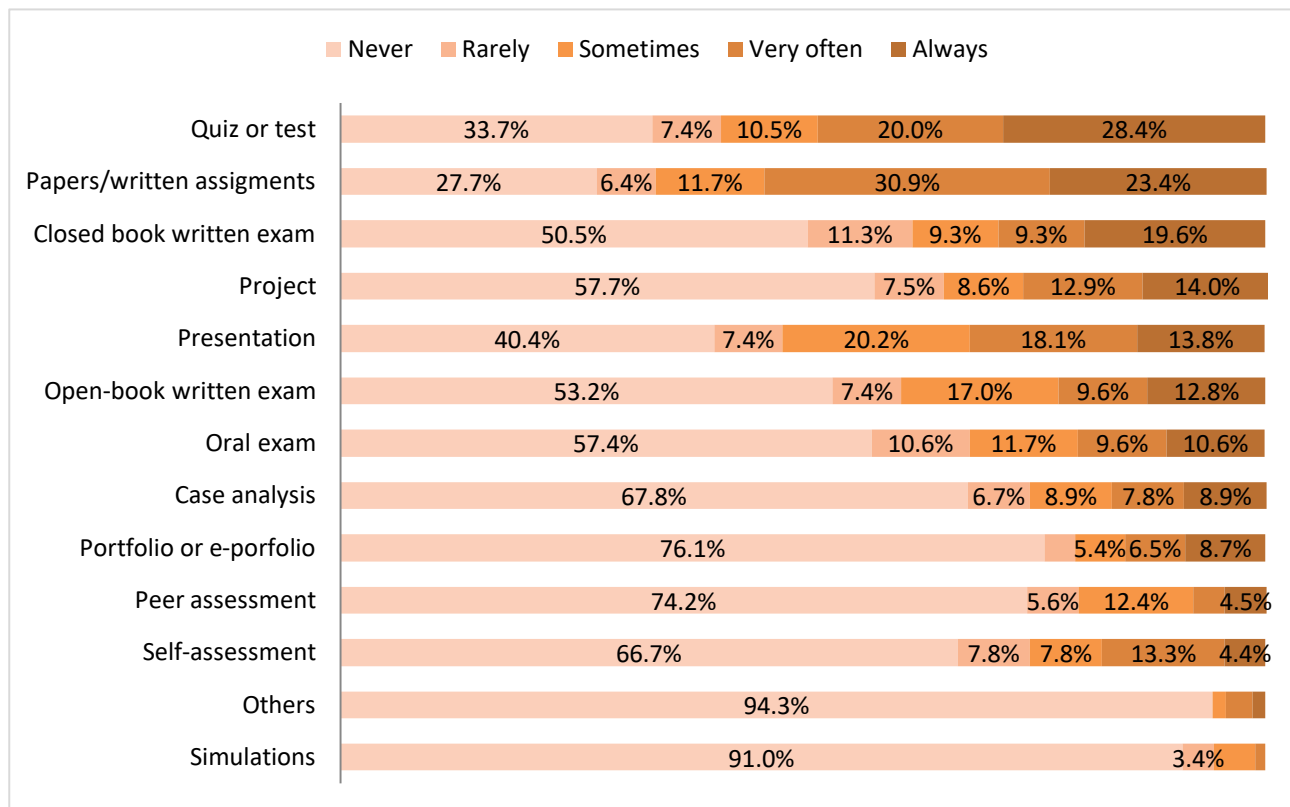
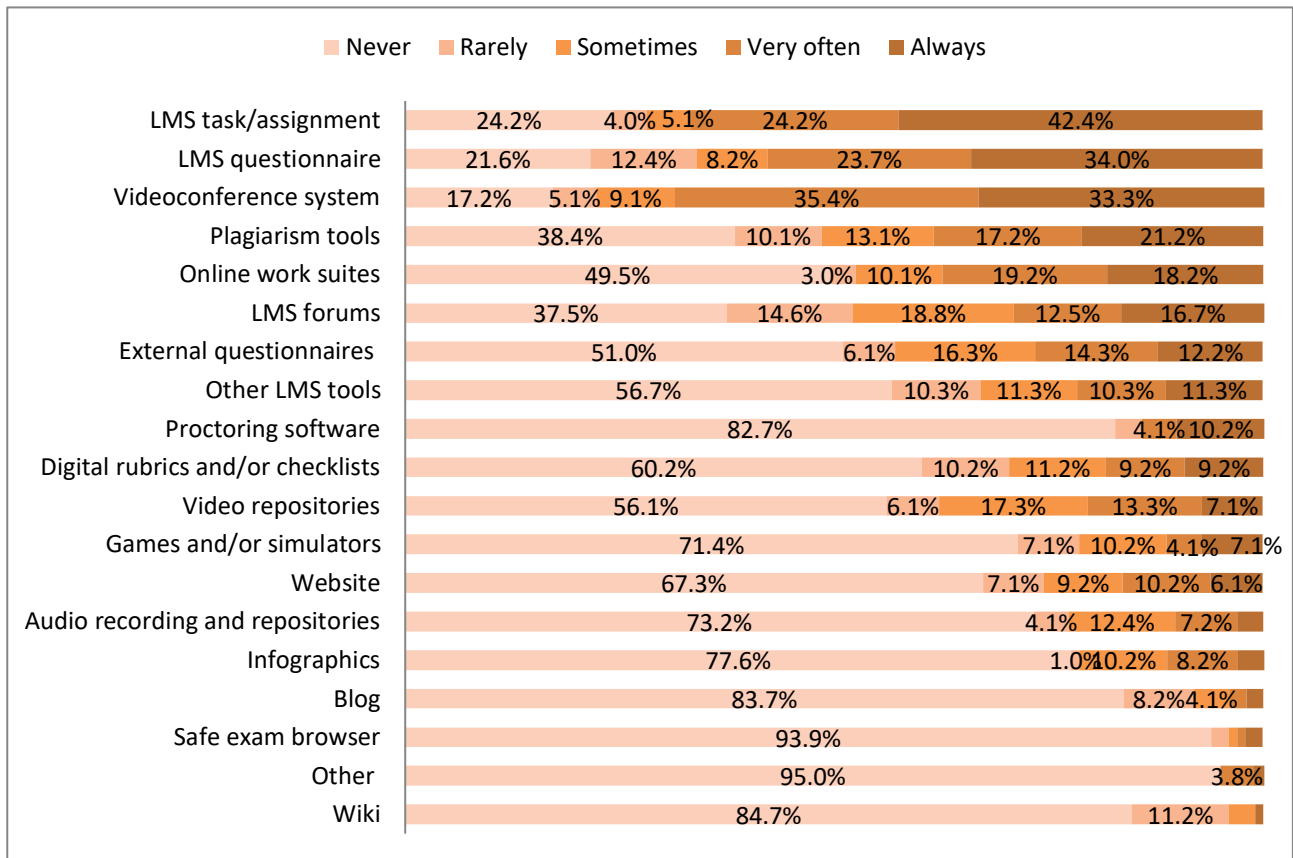


Figure 10. Online assessment actual practices in summative assessment (n=90)



Concerning online/digital tools to realize these online assessment practices, the collected data are consistent with the actual practices (see Figure 11). The following tools stand out: LMS task/assignment, LMS questionnaire and videoconference system.

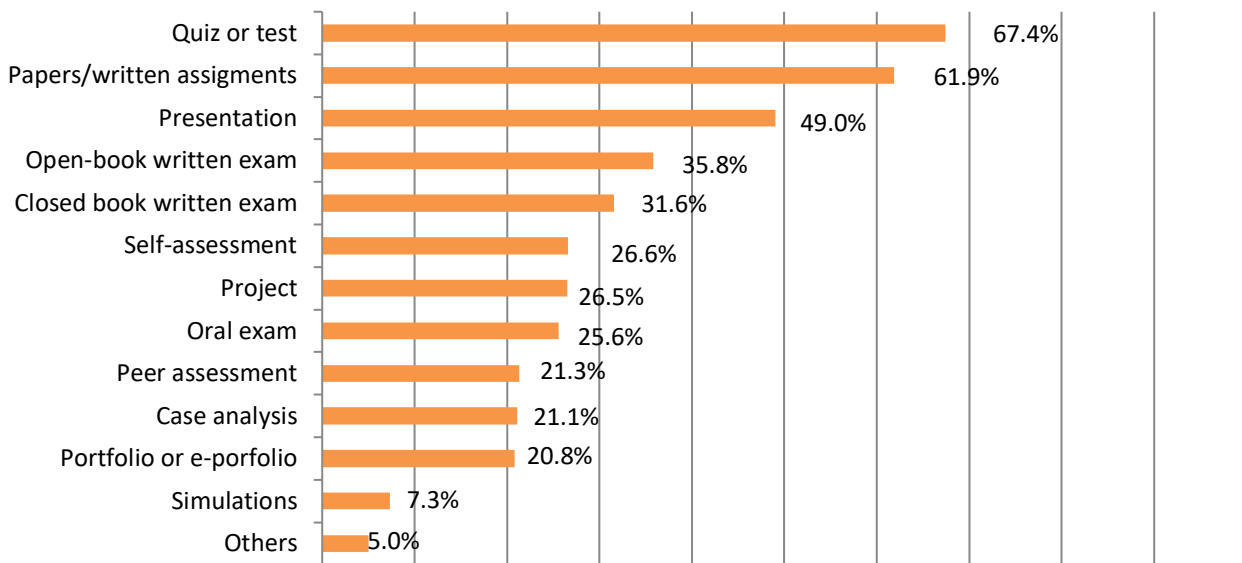
Figure 11. Online/digital tools actually used for online assessment (n=90)



Preferences

Regarding preferences of online assessment practices, the level of comfort is remarkably low compared to the knowledge. Exceptions are the most common practices applied, which were also observed in Figures 8 and 9 (quiz or test, papers/written assignments, and presentation) (see Figure 12).

Figure 12. Comfort with online assessment practices (n=100)



Institutional factors: guidelines, leadership and preconditions

Most of the instructors have neither at present nor recently administrative charges (e.g., vice dean, head of studies, etc.) (58.6%). Out of the ones with administrative charges, 59% think that the institutional guidelines regarding how to conduct online assessment have been modified/removed/adapted since these guidelines were created at their institution.

Several instructors consider that there were some improvements in relation to the **institutional guidelines** concerning some aspects, especially in terms of preparation and implementation of test exams, study program flexibility, and the adaptation/development/acquisition of institutional platforms and tools. These aspects can be reflected in the following quotes:

“Instructions have been established when setting up the exams type test (duration according to the number of questions, possibility to navigate between forward and backward questions...)” (ES)

“They are adapted to current findings and specifications” (DE)

“Some modifications have been made regarding exam security and some developments have been applied regarding tools and software” (TR)

“The experience of the last two years, with the massive shift to online learning/examining, has generated feedback on practices that have helped policymakers adapt to certain realities” (BE)

Others emphasize that there were no relevant improvements, and instructors were on their own. Some elaborations from these instructors are as follows:

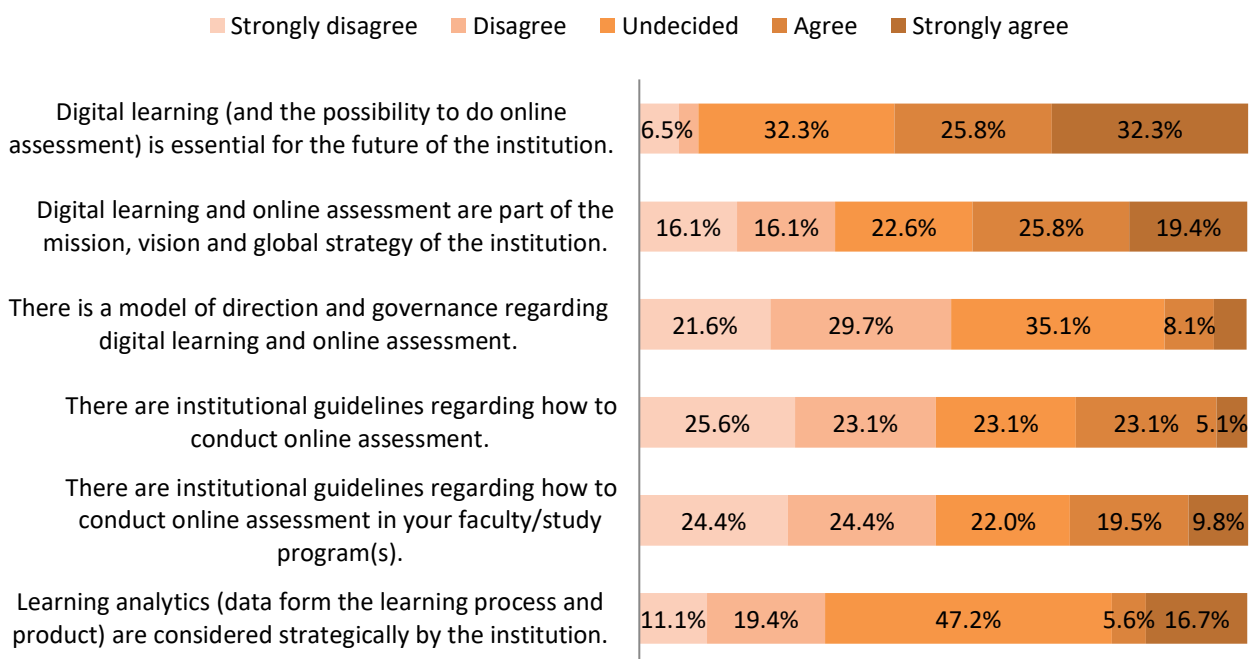
“Only open book exams are allowed online and that has not changed” (BE)

“There are no guidelines but recommendations, which have been adapted to new times...” (ES)

“We have to wake ourselves up too much” (ES)

Considering only the instructors with administrative charges, most statements regarding **institutional leadership** generate indecision or, even, disagreement (see Figure 13). However, 58.1% of these instructors agree or strongly agree that digital learning and online assessment are key for the future of the institution.

Figure 13. Leadership statements regarding online assessment (n=40)



The role of the institutional support or leadership is key by many of the instructors:

“Institutional culture affects the practices of faculty members in this regard, as it does in every other subject. If there is no direction in the institution, if other faculty members do not make online assessments in the post-covid period, I do not do it either.” (TR)

“They are decisive. Without the institutional momentum (approach, regulations, resources, training, ...) it is difficult for centres, study programs and instructors to adopt online assessment as a form of further assessment format for the study programs and, even more, for online assessment practices to become common.” (ES)

Regarding the **preconditions for online assessment to work**, the instructors mention aspects related to five factors: a) pedagogy (online assessment design), b) instructors (training in online assessment, digital competencies, time factor, teaching culture), c) infrastructure (equipment/general, platform, security/privacy, tools, accessibility, connectivity), d) institutional approach (regulations, support, legal issues) and e) students (learner culture, digital competencies).

However, the emphasis is especially on the instructors, the infrastructure, and the institutional approach, as can be observed in the following statements from the instructors:

“More training and institutionally stimulating their use should be done. This was done for COVID, but I see that it has now been put back on the shelf and actually it seems that online work is understood as something when there can be no face-to-face. It is partly because we still lack training, and it is therefore easier to do otherwise.” (ES-Instructors)

“[...] and these should be proper training provided to be able to use these tools to the fullest extended possible.” (TR-Instructors)

“To understand / know what student learning is. Why we assess. How assessment should be included to learning, institutional support should prioritize these tools and then adjust themselves / policies.” (TR-Instructors)

“The software must be such that the questions presented to the students cannot be copied or saved such that we can recycle (in slightly different forms or not) the questions.” (BE-Infrastructure)

“I believe that online assessment can be an interesting complement, but it is difficult to verify the authorship of the assessment tasks. Therefore, I believe that in many cases, it must go hand in hand with an in-class assessment.” (ES-Infrastructure)

“Good working digital tools, that are flexible, robust and generally useable.” (BE-Infrastructure)

“To have clear and detailed rules, so that they are intended to be applied. Existing media works. Perhaps more pedagogy and information.” (ES-Institutional approach)

“Guidelines will stimulate adoption.” (BE-Institutional approach)

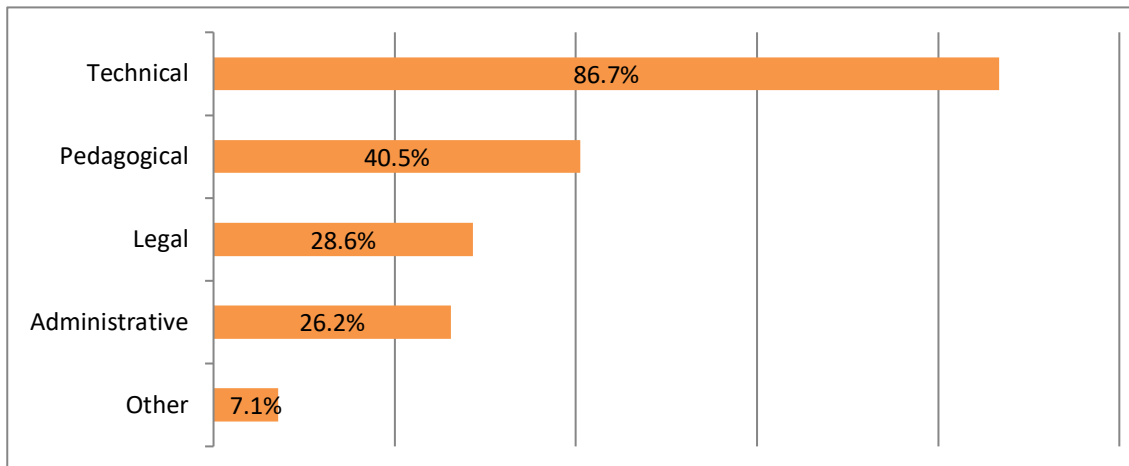
“Technical assistance, pedagogical and andrological assistance might be preconditions for online assessment to work.” (TR-Institutional approach)

Institutional factors: academic professional development

Most of the instructors did not attend any professional development courses related to online assessment (71.7%). The ones that did it were mostly related to technological tools, especially from the institutional LMS. Though less frequently, there were courses on pedagogical methods and practices, and some of them specifically for online assessment.

In terms of institutional support, only 41% of the whole sample of instructors sought it for online assessment practices. The main type of institutional sought support was of technical nature (86.7%), followed by far by pedagogical support (40.5%) (see Figure 14).

Figure 14. Type of institutional support sought (n=42)



Some of the institutional support sought reflect a combination of technological and pedagogical aspects, for instance:

“Which technology to use? Which institutional online assessment practices are allowed?” (BE)

“To know if the online exam was designed correctly both from a technical and pedagogical point of view. I also wanted to know how to answer some types of questions virtually” (ES)

Overall, the satisfaction with the institutional support was high (83%) and different statements from the instructors confirm it:

“They answered all the doubts I raised, and allowed me to perform a good evaluation process” (ES)

“There were training sessions and informative documents were shared with us frequently. Also online meetings were held frequently to inform us about developments” (TR)

“The tech unit responded quickly whenever I asked a question. Problems were solved in a short time. I did not have any corporate problems. I was able to get support” (TR)

The statements concerning negative answers referred mostly to technological difficulties or limitations, or other aspects beyond the institutional support:

“Risk-aversion to engage in online assessment pre-COVID” (BE)

*“I did not manage to generate a specific tool that evaluates, not by number of questions, *but by difficulty of correct questions” (ES)*

The most popular format of institutional support was through personal consultation (63%), followed by informal support between peers and through resources created ad-hoc in the institutional spaces (50% per each). The use of courses was less common (30.8%).

Although seeking for institutional support was not frequent, 70% of the instructors sought support on their own. This support refers to peer consultation/support, checking the institutional website and its resources, and searching on the web. A few instructors mention training outside the institution and tutorials. Some statements follow:

“I tried to talk to some colleagues to get support and form my own practices bases on students’ needs: accessibility” (TR)

“When the need arose, I contacted colleagues” (DE)

“Consulted university practice internationally” (BE)

“I did some research online” (TR)

“I have looked for information on allowable videoconferencing tools to conduct online oral exams during Covid” (BE)

“To colleagues who had already attended training courses...” (ES)

Contextual factors

Regarding the **effects of the Covid-19 pandemic in the design, implementation and support of online assessment**, instructors agree that, in general, the pandemic pushed them for change and to get to know more the institutional tools available for it, but many have negative perceptions about the impact on students’ learning that it had and highlight misunderstandings about the term. Some quotes according to the themes follow (see Table 1).

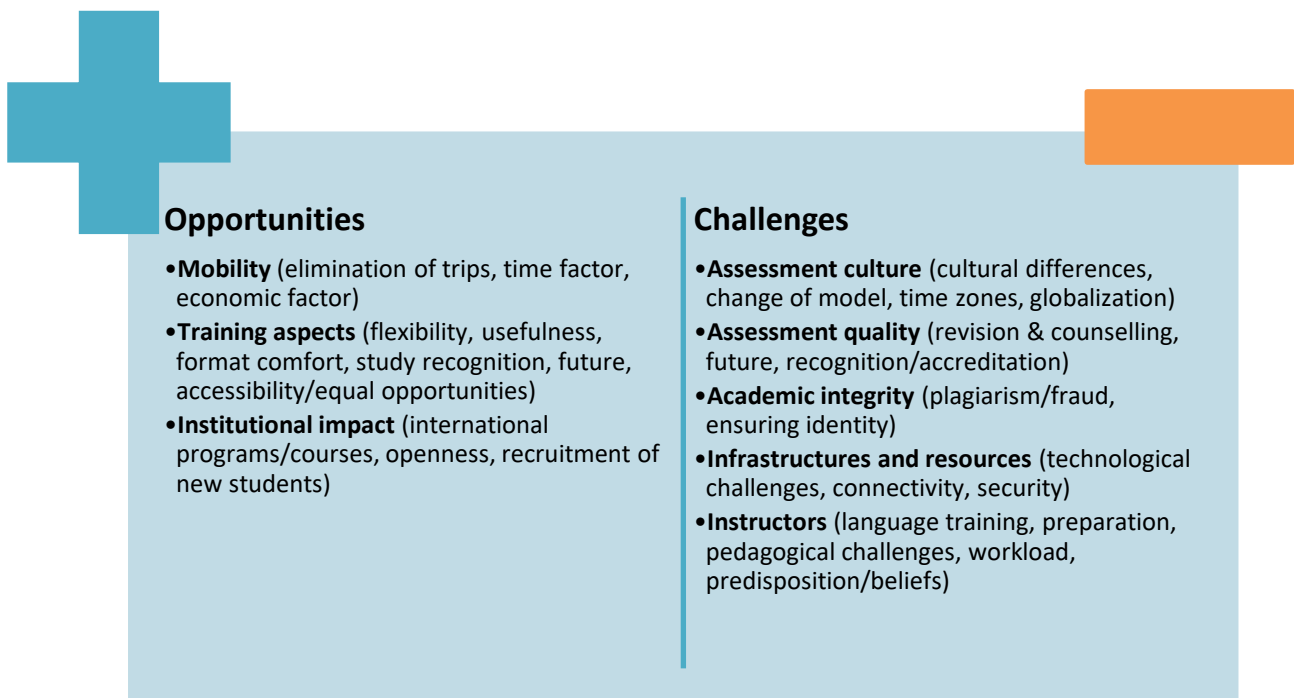
Table 1. Themes and quotes of Covid-19 impact on online assessment (instructors)

Themes	Examples of quotes
Technological innovation	<i>“It has encouraged the availability of new tools and their improvement” (ES)</i>
Assessment culture	<i>“It for sure fastened the process yet, also caused some misunderstanding on assessment. But also it made people to think about teaching, learning and assessment.” (TR)</i> <i>“Frankly, I think that for a lot of instructors it has facilitated the implementation of online assessment, as they were not used to do it before. But in my case, from the very beginning I’m familiar with it and apply it, and frankly, I’m very happy about it.” (ES)</i>
Impact on learning	<i>“To a different extent, everyone has had to work on the matter. A first approximation is that the tool is very powerful. Its implementation has produced a significant drop in the quality of teaching and evaluation</i>

	<p><i>offered, with teaching results that we might call harmful, and that we will take years to overcome.” (ES)</i></p> <p><i>“In studio courses it did not affect too much. We do what we have done so far. Students present their projects on board(miniboards) in principle it is quite similar to face to face. However, physical model of projects it is difficult to assess digitally without touching or seeing in physical environment. for example, copying was an issue. it was impossible to control what students were doing behind the screens. I mean technical drawing exams they can share their drawings during exams and copy them. even though we monitor them it was limited.” (TR)</i></p>
Impact on instructors	<p><i>“For my situation, the primary challenge was moving the assessment (oral exam, knowledge questions on terms and concepts, reading and discussing academic article) online. I made minimal changes to the format and questions for the exam, as this was doable in an online context (and possibilities for fraud were already minimal). I was concerned about fraud, but I trust my students. In an ideal world, there would have been additional staff monitoring activities. The design of the exam also minimises possibilities for fraud.” (BE)</i></p> <p><i>“The COVID-19 has pushed [instructors] to know or use to a greater degree the Virtual Campus tools, including tools aimed at online assessment.” (ES)</i></p>
Actors’ satisfaction	<p><i>“Negatively, because we have increased the implementation of online assessments without having the necessary pedagogical and competitiveness bases. Recent history has redefined the concept of online assessment and has given it negative values and connotations.” (ES)</i></p>

Finally, instructors indicated which **opportunities and challenges they saw for online assessment in international contexts**. Figure 15 summarizes them.

Figure 15. Opportunities and challenges of online assessment in international contexts (instructors)



Some quotes from the instructors illustrate the opportunities:

“Exams could be delivered more easily without asking students to travel.” (TR-Mobility)

“Flexibility both for lecturers and students. Online exams can be scheduled easier, at more convenient times for both parties, and also allows for students (and) lecturers from remote places.” (BE-Training aspects)

“Online assessment could help recruit students who cannot attend many or any sessions.” (ES-Institutional impact)

Regarding challenges, the following quotes serve as some examples of the most populated categories:

“There are countries where the assessment at university is very different from ours and that makes it sometimes very difficult for students to understand what is expected of them here, even though the instructor has repeatedly explained it in class.” (ES-Assessment culture)

“Plagiarism is a big issue which needs to be dealt with.” (TR-Academic integrity)

“I don't see any special challenges, unless purely technical ones (quality of internet connection.)” (BE-Infrastructures and resources)

“The question is to have a good training to master enough tools to adjust to the needs of the students and the course.” (ES-Instructors)

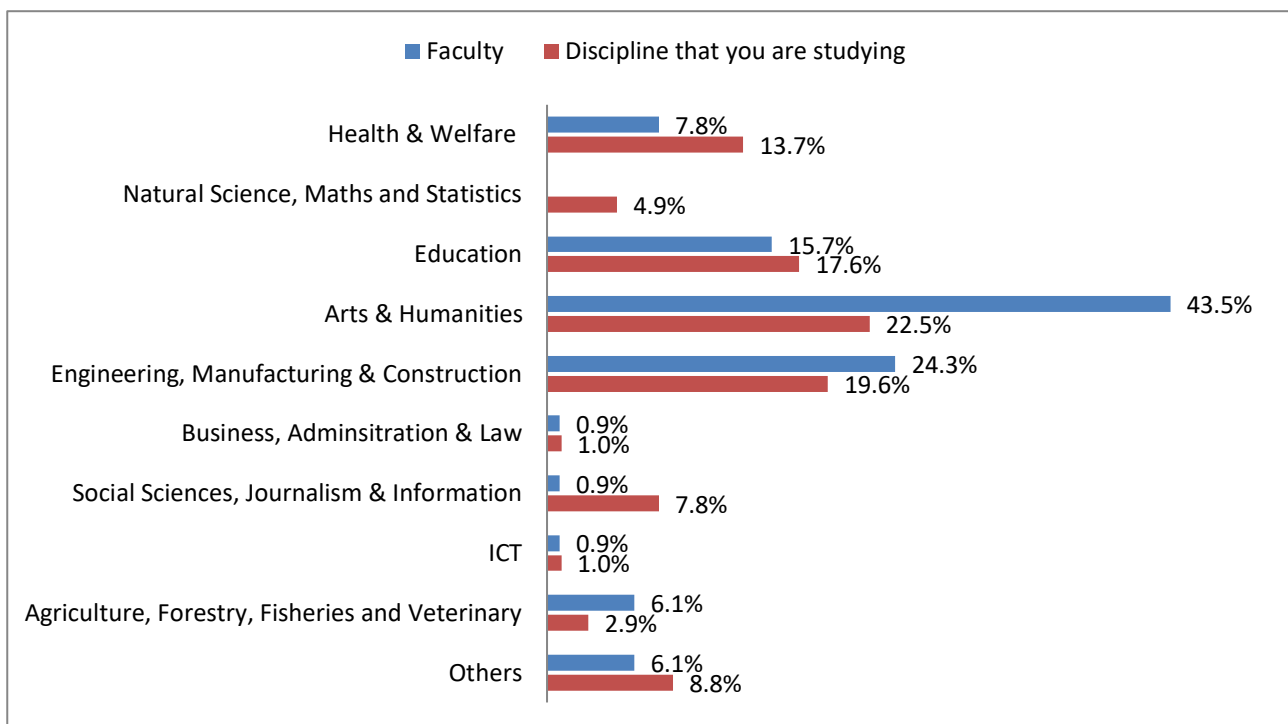
Students

Profile

Students from all faculties and disciplines are represented across the sample, though with major presence of the faculties of 1) Arts & Humanities, 2) Engineering, Manufacturing & Construction and 3) Education (see Figure 16).

The median of year of study is the 3rd year, and most of the students are doing a Bachelor (75%). It is also interesting to remark that 55% of the students combine studies with work.

Figure 16. Faculty and discipline of students (n=115)

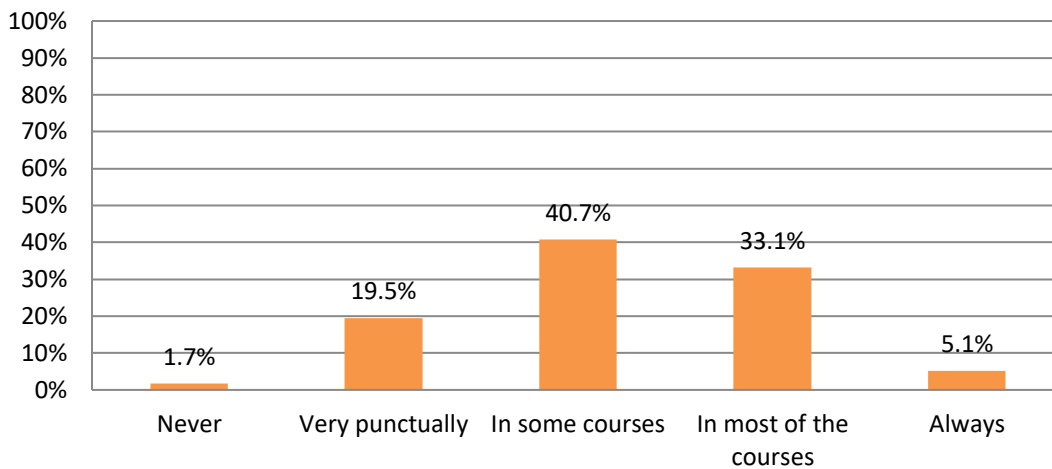


Factors associated: previous experience

78.9% of the students have some experience with online assessment practices in some, most or all the courses (see Figure 17), but 71% of them had it only after the pandemic. As for instructors, students' previous experience was mostly related to the use of technological resources in some course, especially the use of online quizzes or tasks.

The most frequent year where students experienced online assessment practices was the 2nd year, followed by the 3rd and 1st years.

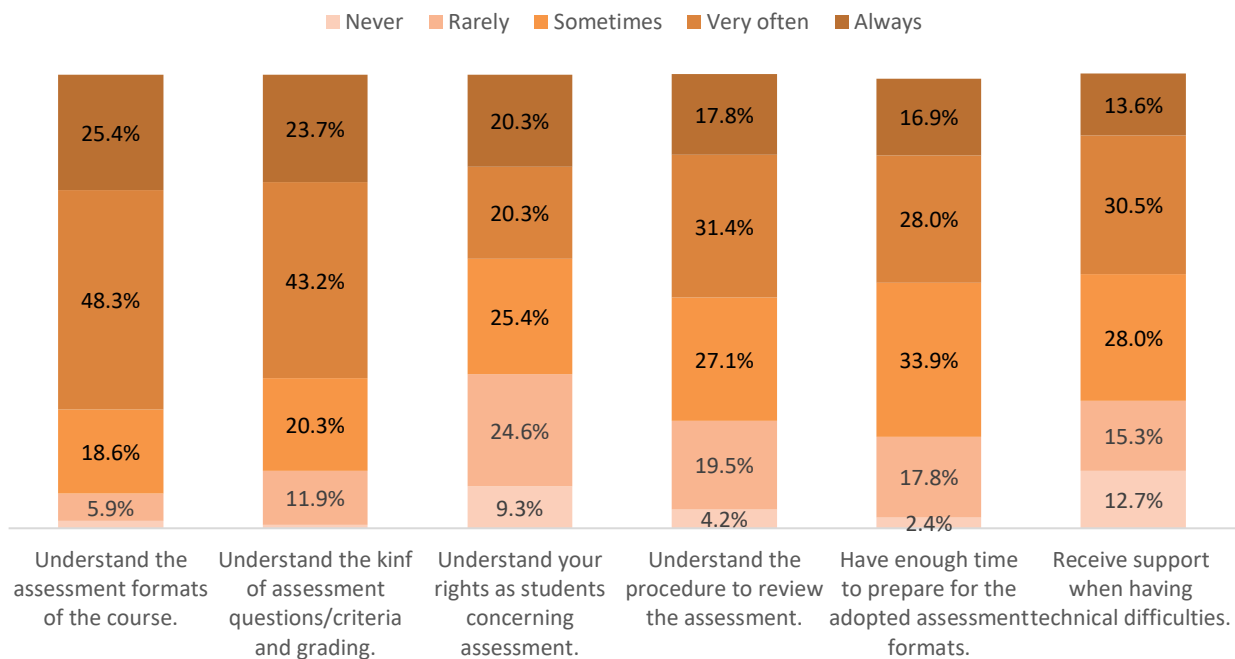
Figure 17. Students' experience with online assessment practices (n=118)



Factors associated: instructor's communication skills

Students consider that they understand well some of online assessment types and procedures that instructors communicate in their courses, but some aspects have important percentages of low frequency (between 20 and 30% for never or rarely). For instance, the one related to the rights as students concerning assessment, the procedure to review the assessment, having enough time to prepare for it or receiving support when having technical difficulties (see Figure 18).

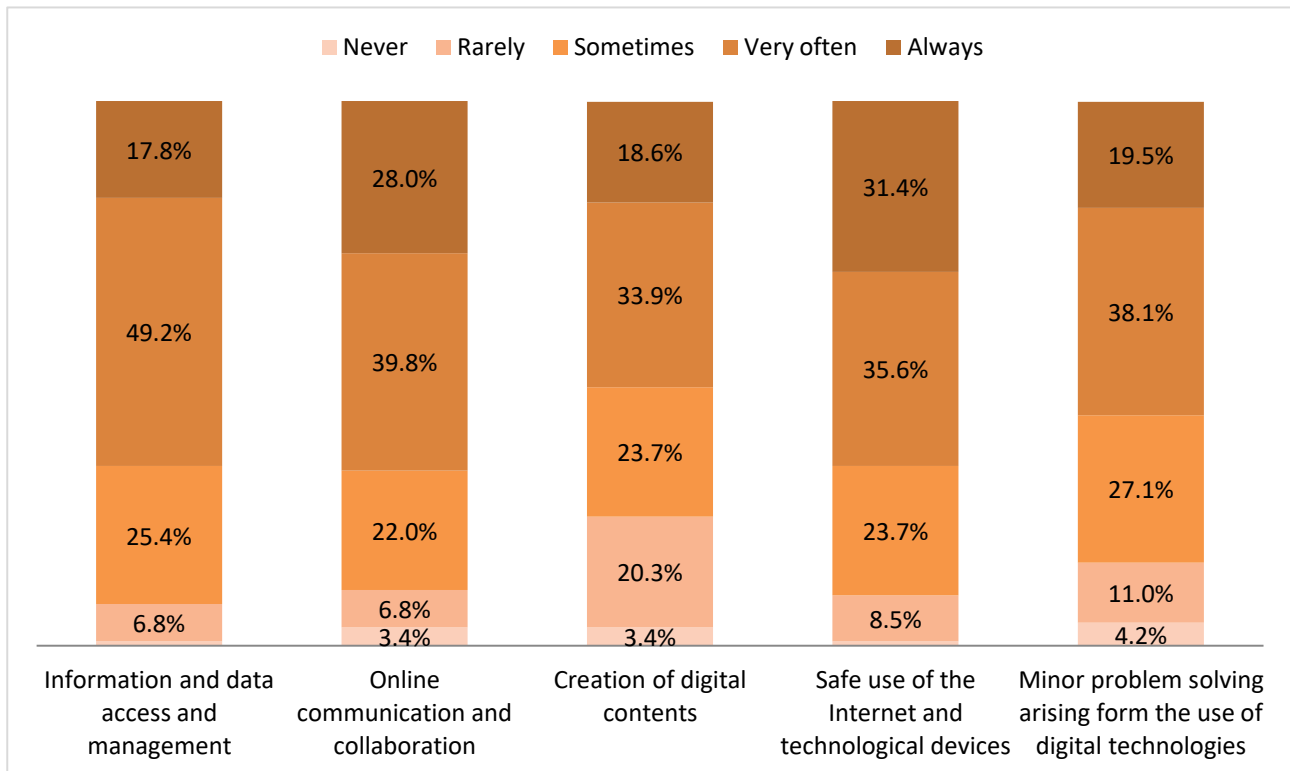
Figure 18. Students' understanding of instructors' communication regarding online assessment in their courses (n=118)



Factors associated: digital competence

Students considered themselves to be fairly competent or skilled in the different digital areas; however, the area of “creation of digital contents” is the one that seems to have more room for improvement (23.7% rarely or never feel skilled in this area) (see Figure 19).

Figure 19. Students’ digital competences (n=118)

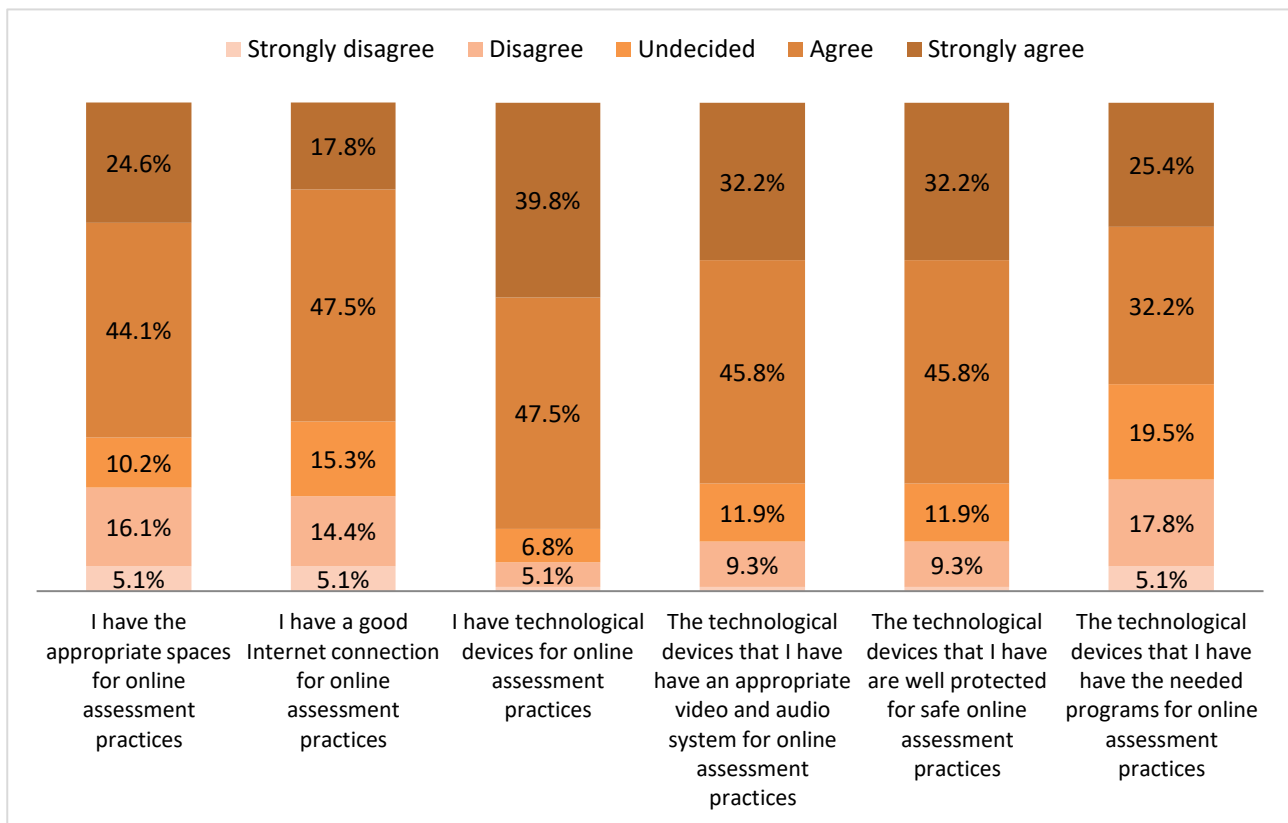


Factors associated: infrastructure

Overall, the own infrastructures are positively valued by students in terms of spaces, Internet connection, technological devices, and their configuration (see Figure 20).

Nevertheless, it is noticeable that 21.2% and 19.5% of the students either disagree or strongly disagree with the availability of appropriate spaces and good Internet connection, respectively. Also, 19.5% are undecided concerning having the needed software for online assessment, and 22.9% disagree with that statement.

Figure 20. Students' perception of own infrastructure (n=118)



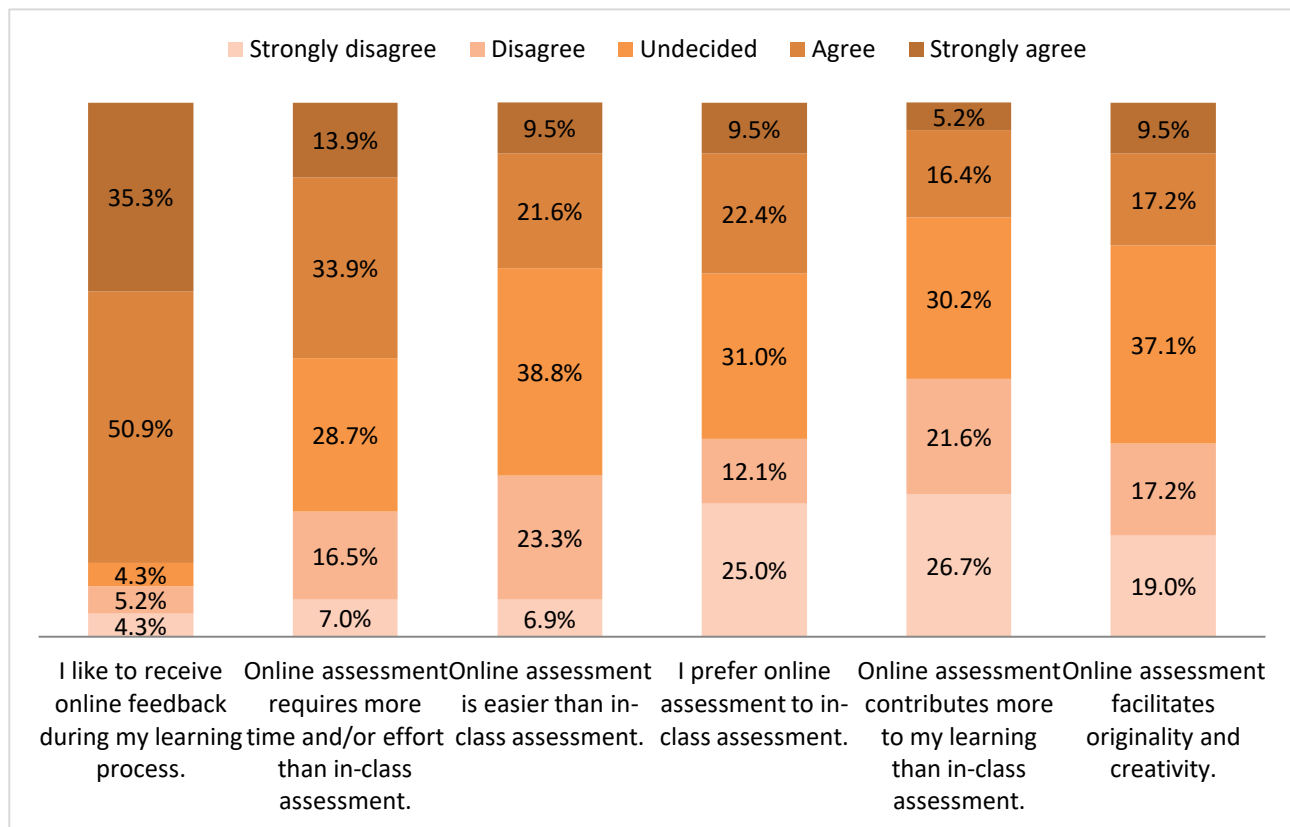
In relation to institutional infrastructure, 61% of the students consider that they have enough to do online assessment in terms of connectivity, spaces, tools offered, etc., against 39% that do not consider it enough for that purpose.

Attitudes

Concerning attitudes towards online assessment, students like to receive online feedback (86.2%). However, a general indecision among students can be observed (see Figure 19) on the statements that online assessment requires more time and/or effort (28.7%), is easier (38.8%), is preferred (31%), contributes more to their learning than in-class assessment (30.2%), and that it facilitates originality and creativity (37.1%) (see Figure 21).

In addition, almost half (47.8%) think that online assessment requires more time/effort and 48.7% disagree in that online assessment contributes more to their learning than in-class assessment.

Figure 21. Students' attitudes towards online assessment (n=116)



Practices

In formative assessment, the actual use of online assessment practices is mostly, always and very often, reduced to the use of papers/written assignments, quizzes or tests, presentations, projects and closed-book written exams (see Figure 22).

In the case of summative assessment, the results are practically the same, but with less frequent practices for every practice, most notably for self-assessment and peer-assessment, in comparison to the previous results (see Figure 23). Also, the closed-book written exam has more presence in the summative than in the formative assessment, as well as the open-book written exam.

Figure 22. Online assessment actual practices in formative assessment (n=116)

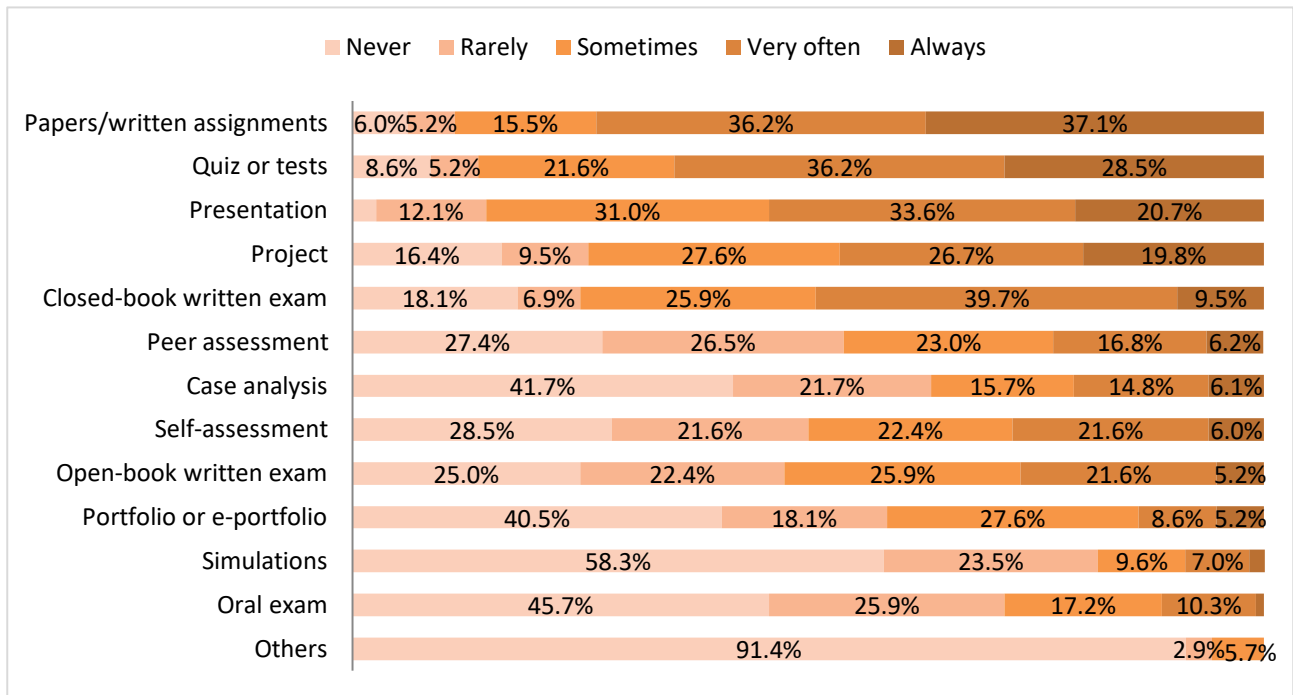
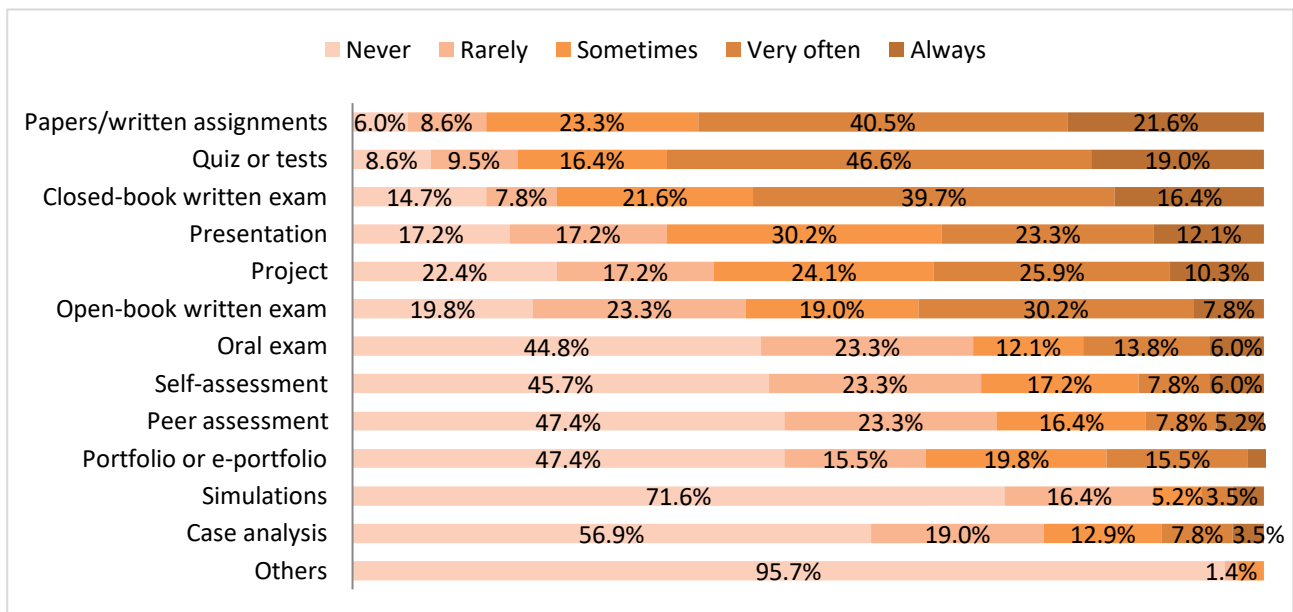
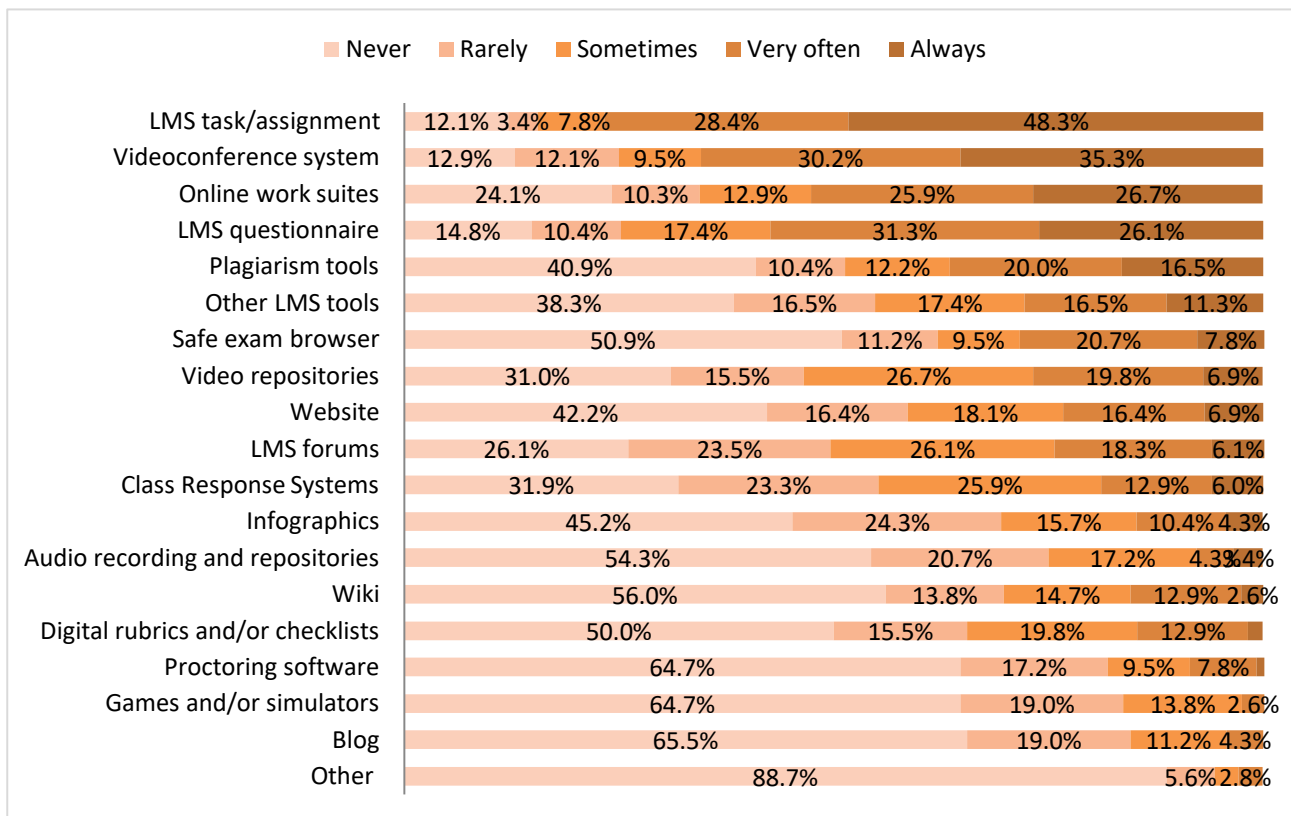


Figure 23. Online assessment actual practices in summative assessment (n=116)



Concerning online/digital tools to realize these online assessment practices, data are overall consistent with the actual practices (see Figure 24). The following tools stand out: LMS task/assignment, videoconference system, online work suites and LMS questionnaire.

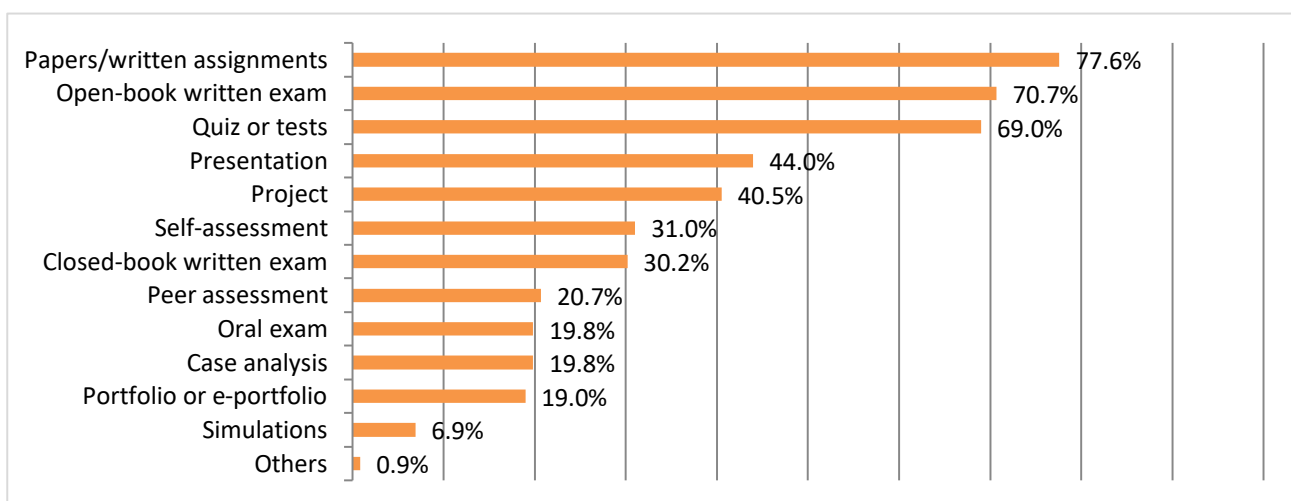
Figure 24. Online/digital tools actually used for online assessment (n=115)



Preferences

Students' preferences for online assessment practices overall coincide with the ones that they have experienced, although open-book written exam is highly ranked in the comfort list, compared to its position in the practices (see Figure 25).

Figure 25. Comfort with online assessment practices (n=116)



Contextual factors

Regarding the **effects of the Covid-19 pandemic in the design, implementation and support of online assessment**, students were, overall, positive about the experience in terms of possibilities but pointed out issues related to time and the instructors. Some quotes according to the themes follow (see Table 2).

Table 2. Themes and quotes of Covid-19 impact on online assessment (students)

Themes	Examples of quotes
Technological innovation	<i>"I learned many tools to do my research and finish my essays so for individual learning it helped me."</i> (TR)
Assessment culture	<p><i>"We have had to do absolutely everything online. Now it is required to be in presence in the assessment tasks, but we keep using these tools, for example for teamwork."</i> (ES)</p> <p><i>"Very negative in terms of accuracy, relevance, reliability, consistency and validity."</i> (ES)</p> <p><i>"Time and place dependency would no longer apply. One studies independently of one's place of residence."</i> (DE)</p>
Impact on learning	<p><i>"I believe that class interactions have been missing and much needed to have discussions, and other activities at the assessment level have been good, I think it has only been lacking at the level of learning and the dynamism of this one."</i> (ES)</p> <p><i>"In pandemic period we have closed-book exam or tests. Some departments give us limited time. This time was not enough to solve problem. It caused a problem for me. Pandemic period is not a good experience for me."</i> (TR)</p>
Impact on instructors	<p><i>"It increased too much. The experience level of instructor influenced my practices."</i> (TR)</p> <p><i>"It has had a great influence. Instructors were also very lost, and we as students already had a lot of doubts and if the instructors were not sufficiently prepared, they create a great deal of annoyance, because literally, we had to take the chestnuts from the fire. Repeated questions, questions that came out twice with different answers... It has been a difficult stage, some instructors better than others, but generally chaos."</i> (ES)</p>
Actors' satisfaction	<i>"Online exams are useless."</i> (ES)

Concerning the **opportunities and challenges that students saw for online assessment in international contexts**. Figure 26 summarizes them.

Figure 26. Opportunities and challenges of online assessment in international contexts (students)



Some quotes from the students illustrate the opportunities:

“Not having to travel to the university for those of us who are from outside with the economic expense that this entails.” (ES-Mobility)

“Having the chance to participate in the assessments where we feel comfortable increases the success. Being able to participate remotely is an opportunity for students who would not normally be able to attend.” (TR-Training aspects)

“Online assessment can give opportunity to see international thoughts, views. Also students can join any assessment and gain success for who cannot leave their countries.” (TR-Interculturality)

“Online exams gave us an opportunity to take courses from other universities.” (TR-Institutional impact)

Regarding challenges, the following quotes serve as some examples of the most populated categories:

“They were away from the campus, they felt like they are alone. Hard to follow the hours due to time difference in hours between countries.” (TR-Assessment culture)

“Fraud is obviously a problem and this leads to the quality of evaluation being questioned, and it can be addressed by using proctor softwares and Skype interviews as our institution did. Questions that test understanding instead of recounting knowledge also helped with this. It is also a challenge for students to stay focus / pay

attention for a long period of time with online teaching, learning and assessments because of lack of interaction, supervision and clear guidance. This is still mostly dependent on the student's ability to manage himself/herself.” (BE-Academic integrity)

“Connection problems can pose obstacles.” (ES-Infrastructures and resources)

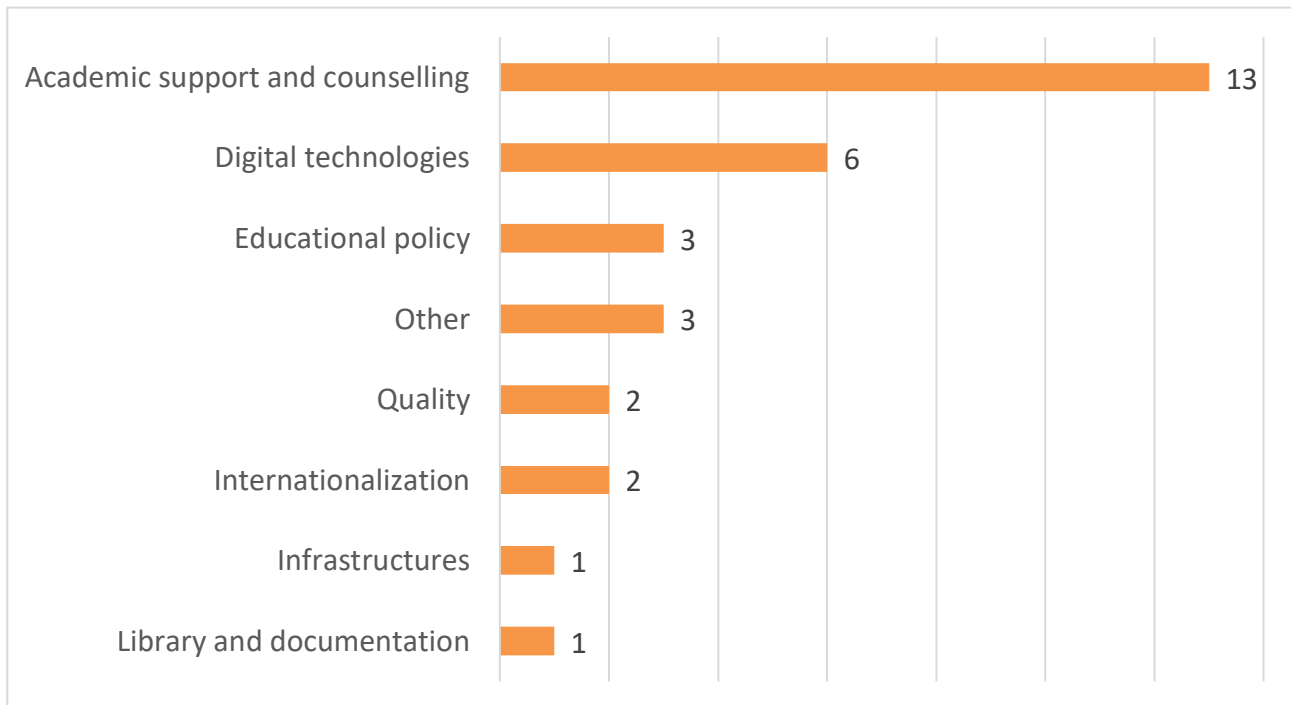
“There might be some resistance from the teaching side, especially regarding the risk of cheating. But as more exams are oral or open book, this risk might be overestimated.” (BE-Instructors)

Administrators

Profile

From the type of tasks that the administrators carry on, most of the participants were in units related to academic support and counselling, followed by digital technologies (see Figure 27). In the case of 8 administrators, the profile was not specified.

Figure 27. Administrator's profiles according to their roles (n=31)



Most of the administrators do not have teaching workload (66%) and use their knowledge about online assessment practices as part of their role as administrative staff (52.9%) (see Figure 28 and 29).

Figure 28. Administrators' familiarity with online assessment practices (n=35)

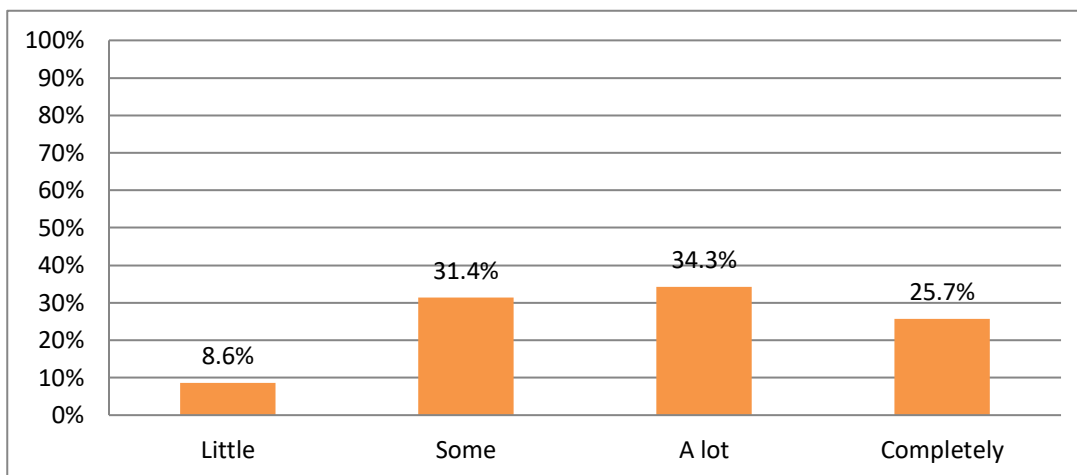
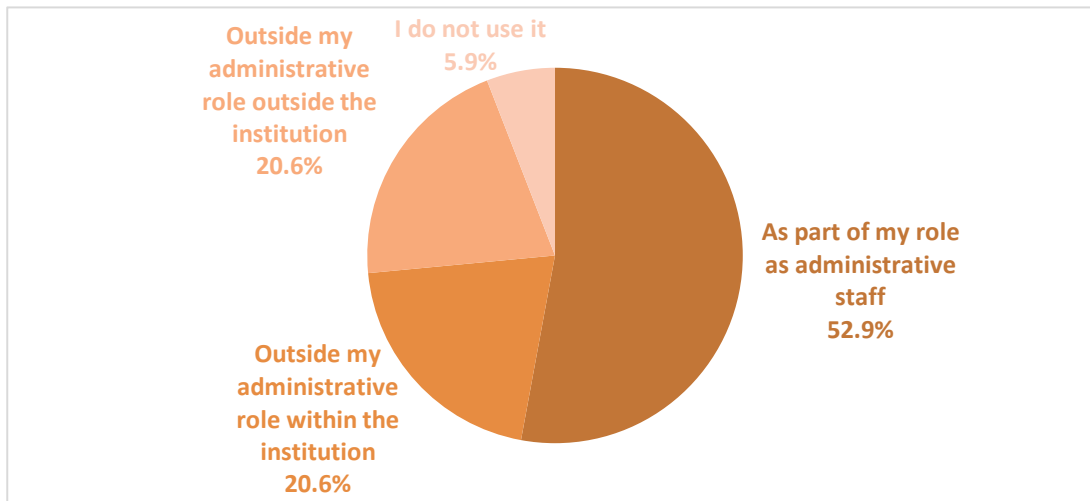


Figure 29. Use of knowledge about online assessment practices (n=34)

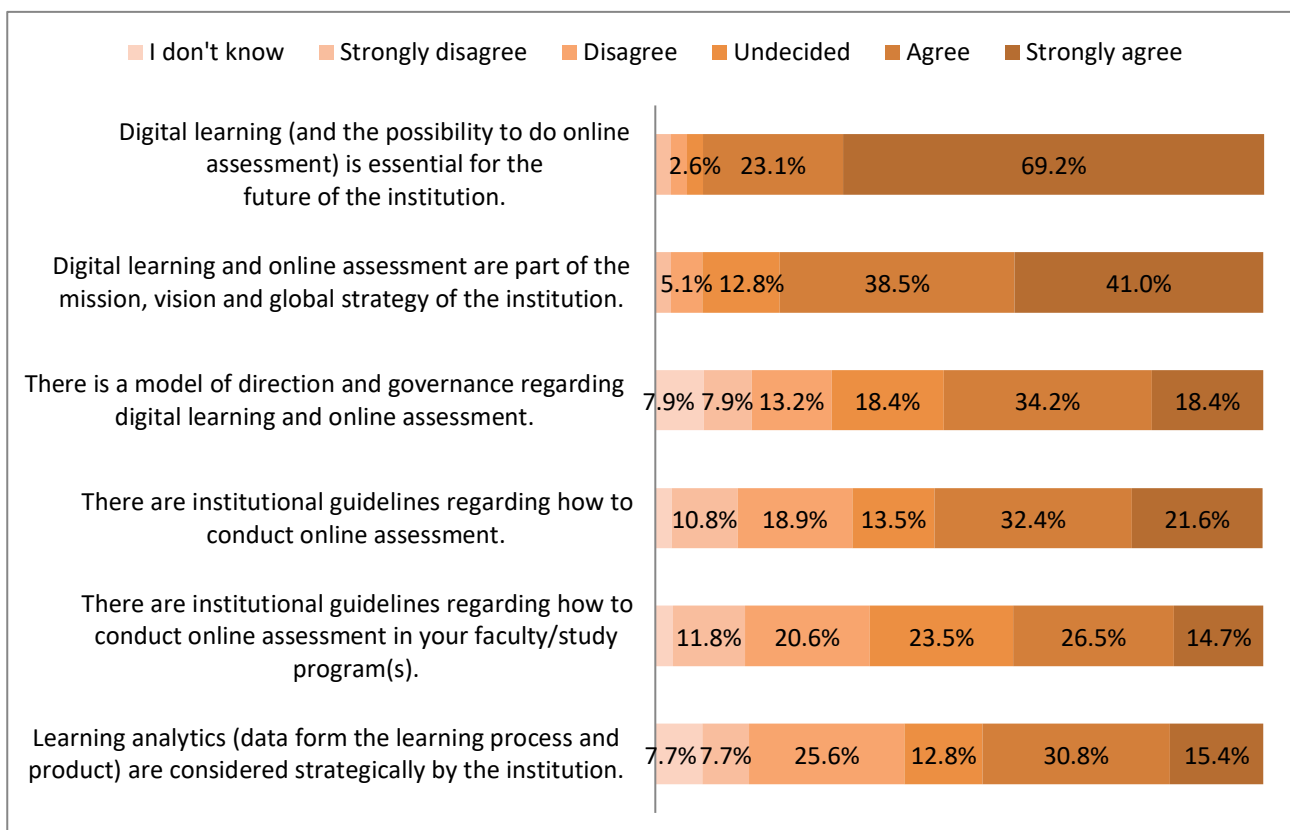


Leadership & governance practices

Administrators perceive that digital learning and online assessment is an important part of the mission, vision and global strategy of the institution (79.5%), as well as essential for its future (92.3%), as can be observed in Figure 30.

However, they are mostly either undecided or in disagreement with the statements regarding institutional guidelines for online assessment. If learning analytics are considered strategically by the institution seems to also have an important share of disagreement.

Figure 30. Administrators' perceptions on leadership and governance practices (n=39)



67% of the administrators think that the **institutional guidelines regarding how to conduct online assessment have been modified/removed/adapted since the guidelines were created at their institution**, but that the adaptations were either minimal (adjustments due to the Covid-19 pandemic), are still in progress or need to be done. With this respect, for instance, we can observe the following comments:

“The policy itself on assessment hasn't formally been adapted (yet), but the view on e-assessment and guidelines for doing e-assessment are in development - together with the development of possibilities to do e-assessment. It is an ongoing process which eventually will lead to formal policy guidelines.” (BE)

“With the pandemic, support measures and good manners have been incorporated, but there is no official documentation from the vice-rectorate regarding online teaching and assessment.” (ES)

“No adjustments were made.” (DE)

“I am not sure if we had any guidelines other than the ones that prepared during emergency online teaching.” (TR)

Concerning **how institutional assessment culture and policy influence online assessment practices**, different themes can be identified:

a) Institutional strategy, mostly referring to the need of guidelines, for instance:

“Policy makers at the faculty level are requesting institution-wide guidelines; a solid, comprehensible framework that allows for flexible implementation. For the teaching staff, it seems to be very important that the guidelines are communicated via their direct policy makers (local faculty policy makers; and not so much institution-wide guidelines; the programme committees play a big role in this as well). In order to establish a good vision and culture at the faculty level (and therefore the teaching staff level), there must be an institution-wide vision and culture that the faculty policy makers can easily tap into.” (BE)

“I believe dynamics and culture have direct and significant effects on practices. If assessment is given importance, then essential adaptations will be made for effective assessment online education.” (TR)

“Clarity about the policy and culture of online assessment provides tools to nurture and shape practice and removes uncertainties. It offers educational developers a language and framework to guide teachers in a targeted manner.” (BE)

“I am aware that guidelines are being set, but that it sometimes costs a great deal that everyone implements them. I consider the momentum given to them from the Dean of the Faculty to be very important.” (ES)

b) Regulations:

“The framework conditions determine the scope and resources. The decision to test only with ILIAS is conducive to constructive alignment in the learning process, as the same system is used for practicing and testing.” (DE)

“The general and overarching framework conditions for the feasibility of online examinations have a significant influence on the scope of possible examination performance; the decision to use a uniform LMS as a learning and examination platform facilitates handling and accommodates learning and examination processes in the sense of constructive alignment, as expectations of examination performance and conditions can be made more transparent in advance.” (DE)

c) Instructors:

“Assessment type would be influenced by it. It would influence assessment approach like if it is going to be student-centered kind of grading would be affected, what and for what purpose will the grades be used would be related to the assessment culture and policy.” (TR)

“Sometimes, we do see a mindset change is needed in order to cause changes in online assessment practices. This was forced upon many institutions due to the pandemic, but I personally do feel many lecturers and students prefer the 'old-fashioned' way of physical attendance and assessments. Although, having online activities can be a true complementary benefit, especially for those groups of students and lecturers that are struggling to meet the requirements of the previous methods of teaching (physical).” (BE)

d) Students; only one comment refers to the students' commitment:

“More engagement of the students” (TR)

Teaching & learning assessment support

72% of the administrative staff (n=28) report having links/connections to any kind of support services for online assessment and 94% state that the institution has a counselling service or infrastructures about online assessment for instructors and/or students, which includes: a centralised support service to teaching (BE, DE and ES), a decentralised support service to teaching in the faculties (BE and TR) and a dedicated service or team for supporting assessments or online assessments (BE and DE). These services offer training and counselling for faculty members (all), and online documentation (e.g., guides, podcasts, webpages, etc.) (BE, DE and TR). A DE administrator mentions the offer of exchange formats between instructors.

Out of the 28 administrators related to teaching and learning support, 75% state that **professional development courses and personal consultation on online assessment** were offered to the instructors. Regarding consultations, all formats were used, being more common in the following order, small group (87%), individual (83.3%), online through videoconference (72.7%) and in presence (66.7%). The topics of the training offer and consultations were varied and included, in order: online assessment tools (especially quizzes), teaching and learning process (virtual campus, pedagogy, methods), and communication tools (videoconference). In addition, half of the respondents considered that the offer of courses was not enough for the instructors' needs, but also the instructors' involvement was to be considered:

“They were able to design the assessment in their courses, know where to find extra support if needed, know how to check the quality of their design.” (BE)

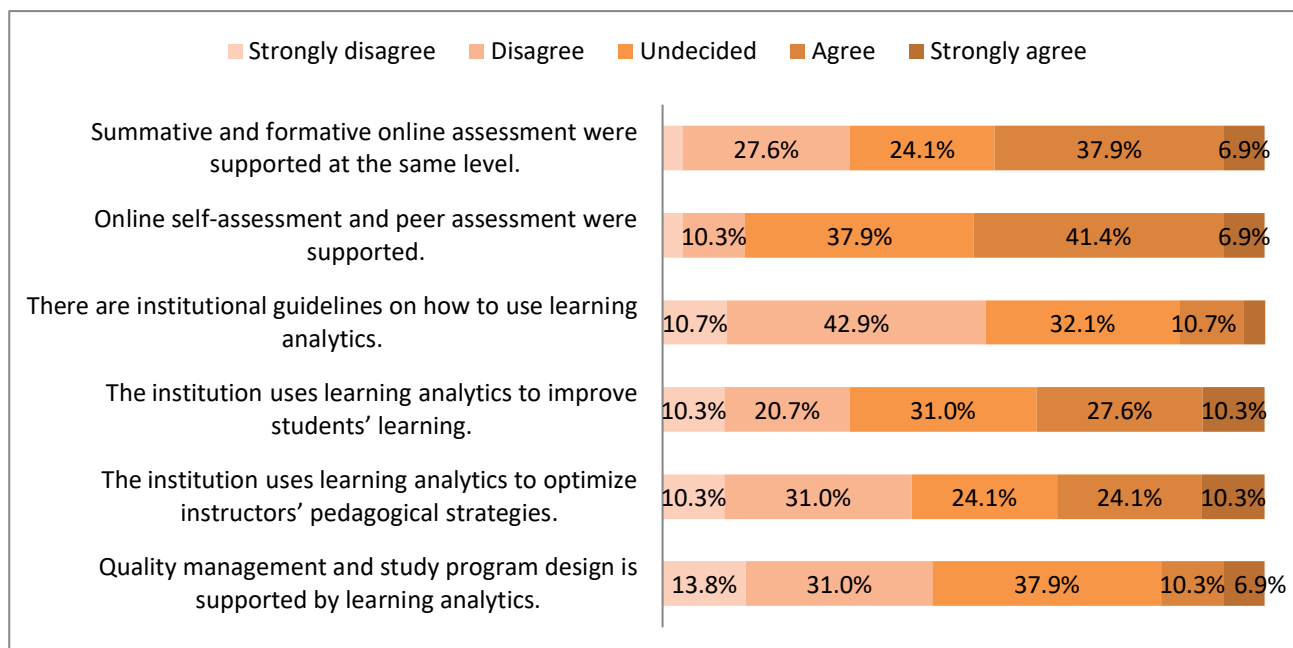
“There would be more need for e-exams in presence, but the human resources are not sufficient. However, counselling and training offers for conducted exams is perfectly sufficient.” (DE)

“With the instructors’ training issue, it is difficult to have high attendance. We need to analyse carefully why this lack of assistance should be due, to timetables, material, content, instructors, etc. What I believe is that training and retraining is essential if online assessment is to be deepened or improved, and it is therefore essential to properly be trained and instructors should attend this training in an ‘almost compulsory’ way.” (ES)

“That was a voluntary basis, so most of the instructors, as far as I observed, did not participate it should have been must for all.” (TR)

When looking at the administrators’ **attitudes towards online assessment in teaching and learning assessment support**, there is overall indecision and disagreement with the statements related to the existence of institutional guidelines to use learning analytics and its use in itself to improve different aspects related to teaching and learning practices and institutional practices (see Figure 31).

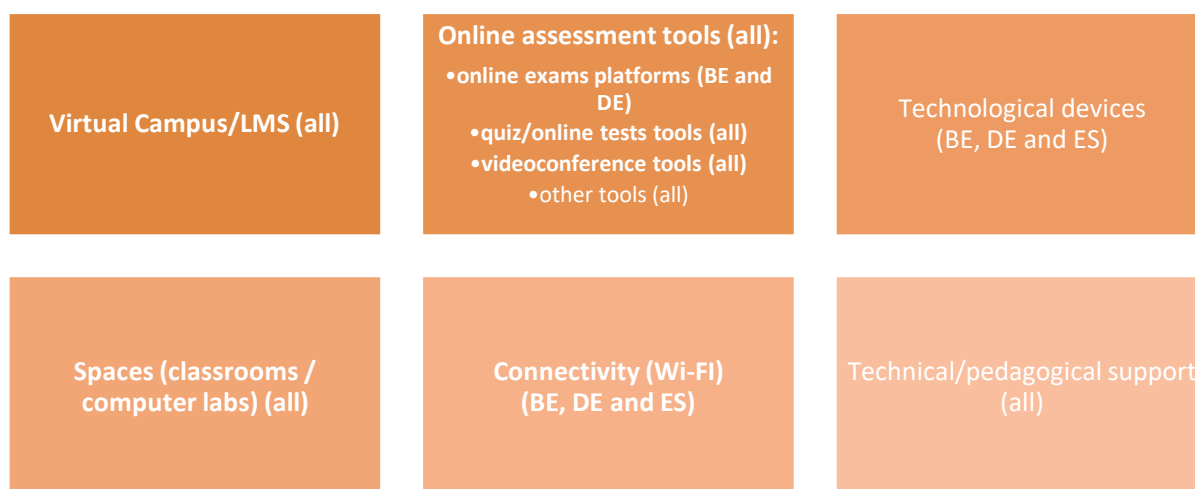
Figure 31. Administrators’ attitudes towards teaching and learning (online) assessment support (n=29)



Institutional infrastructure

Concerning the institutional infrastructures, instructors identified the **technical infrastructures and technological tools that the institution had at disposal**, the most commonly mentioned are shown in Figure 32 in bold.

Figure 32. Institutional technical infrastructures and technological tools



A BE administrator mentioned that *“For now, there's little technical infrastructure for online assessment. There has been great improvement for online teaching (e.g., extra video conferencing devices), but there is not sufficient infrastructure for online examinations. E.g., not enough electricity plug ins for all the laptops of student, no possibility to turn off the wifi in one classroom, proctoring possibilities are lacking, etc.”*

The administrators consider the **institutional infrastructures mostly something to very adequate** (77.1%), but value it slightly less positively when it comes to their quantity (65.7%). With that respect, the perceptions related to three aspects:

a) Technological resources (apps, tools, devices, ...). For instance:

“There will be a need for more (decent) devices for large-scale on-campus online assessment, such as Chromebooks or other types of laptops. The “pc class” concept is starting to become very outdated.” (BE)

“Webcams and mics are lacking to meet their demand” (ES)

b) Infrastructures (connectivity, Wi-Fi, platform, spaces, ...). As illustrated in the following quotes:

“Improve campus tools, update the virtual campus version, integrate the tools correctly offering all their functionality” (ES)

“We have made important steps forward in integrating new software in our learning platform” (BE)

c) Pedagogical issues (e.g., assessment formats, class size, and feedback...). It refers to institutional infrastructures' characteristics affecting some pedagogical aspect. For example:

“Institutional resources are only sufficient to offer digital examinations on a limited scale and they are usually linked to limited time periods, which make long-term goals more difficult to pursue.” (DE)

“An online exam in a PC-lab is relatively well-supported if your group of students is 50. For larger groups there is insufficient infrastructure. If exams are taken outside the university's premises, the support for online proctoring is inexistant.” (BE)

When considering the **main advantages and difficulties that the institutional infrastructure underwent in the COVID-19 situation**, administrators valued the technological tools and the LMS, as well as the opportunities it has provided in terms of adaptability/flexibility, the combination of educational modalities and mobility:

“The infrastructure and technical tools became more and more available during the covid19-crisis, gradually giving answers to needs of instructors and students, but there was also a need to make sustainable choices for the future (financial, stability, integration with existing infrastructure & technology). Moreover, the 'time & cost' of professional development of the teaching staff to use all of this in a truly pedagogical way (a blended design) was big, so this also was a step by step approach.” (BE)

However, administrators highlight as main challenges issues related to the availability of appropriate devices and stable online exams' software; the lack of readiness of the infrastructures (e.g., spaces), technical issues (e.g., network stability), of forms of control/surveillance and of trained staff:

“Making sure the online examination software does not crash and remains stable throughout the examination. Apparently, this was an issue with xToledo. Also, many students have a bad connectivity at home and felt really worried about not being able to participate in/complete an online exam - it is a challenge for the university to accommodate to these (very large groups) of students, connection-wise.” (BE)

"The staff don't know how to use them properly. It may not be compatible with systems used in other institutions." (ES)

Contextual factors

Five themes are identified among the administrators' answers to the **Covid-19 impact on the design, implementation, and support of online assessment** (see Table 3).

Table 3. Themes and quotes of Covid-19 impact on online assessment (administrators)

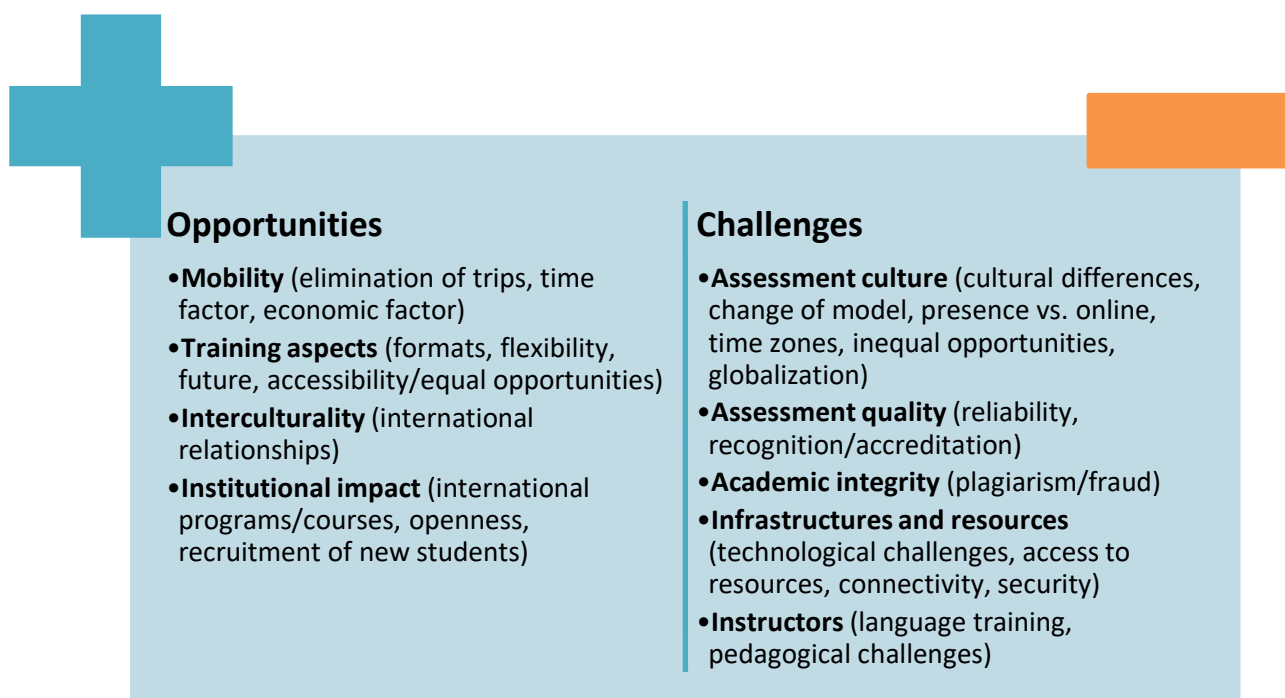
Themes	Examples of quotes
Technological innovation	<p><i>“As mentioned before, it was rather sudden and changes had to be made quickly. 'Speed trumps perfection' meaning in the beginning it was not all good, but everybody learned quickly to adapt and now all institutions have a lot of good materials/guidelines to work with for the future.” (BE)</i></p> <p><i>"The actions were not well planned and were always tied to solving punctual problems without considering a long-term structure" (ES)</i></p>

<p>Assessment culture</p>	<p><i>“Our institution tried not to jump into untested situations for online summative assessment, and invested first in alternative solutions to create safe (both in terms of health and cheating) ways to assess on-site as much as possible. On the other hand, online formative assessment was supported from the beginning as much as possible (and that was already part of the strategy before covid19.” (BE)</i></p> <p><i>“It affected much, most of the courses’ assessment processes were intended to be done in presence.” (ES)</i></p> <p><i>“Increased the trust in organising and conducting online assessment, affirmed the use of BYOD for students, change in priorities of online assessment projects, increased the amount of support material on the use and design of online assessment” (BE)</i></p>
<p>Impact on learning</p>	<p><i>“Online assessment mainly has started after covid. Instructors had difficulty in administrating classical exams online and could not be sure about the results. The institution was not ready to support the instructors.” (TR)</i></p> <p><i>“It made us rethink certain aspects of how we can support teachers in designing their learning environment and what is needed for making online examinations possible. We still have a lot of questions on how we will tackle online assessment on different levels of the institution, so it will be a work in progress for the next several years.” (BE)</i></p> <p><i>“I think it was an opportunity for students, as they have been more approved than usual. This must be improved, because this must not be a stopgap point, but must be improved.” (ES)</i></p>
<p>Impact on instructors</p>	<p><i>“Online assessment was not used prior to covid. So that was the first time instructors experience” (TR)</i></p> <p><i>“It had a huge impact. Many instructors refused to make use of online tools and feedback & assessment methods, sticking to some slightly outdated practices. The pandemic "forced" many teachers to rethink their strategies and proved that it's not rocket science; most of these tools are easy to set up and it work well. Online assessment has become less of a "threat". I think especially the formative assessment has benefited from it. That being said, many instructors did still feel stressed out during summative assessment activities (worrying about things like connectivity issues, technical issues, plagiarism/fraud,...)”. (BE)</i></p> <p><i>“It has us made move on for the good but with the end of the confinement we're back to the same archaic system” (ES)</i></p>
<p>Actors’ satisfaction</p>	<p><i>“Much more attention was paid to online assessment. There are now 2 groups of teachers. A group returning to the old scenario of</i></p>

	<i>traditional assessment. A group that has a taste for it and wants to continue to focus on it.” (BE)</i>
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65% of the administrators consider that their institution has already some experience with online assessment in an international context. Concerning **opportunities and challenges of online assessment in international contexts**, topics have been summarized in Figure 33.

Figure 33. Opportunities and challenges of online assessment in international contexts (administrators)



Some quotes from the administrators illustrate the most populated opportunities:

“International students following a number of courses at a distance can take online exams.” (BE-Mobility)

“Since our institution has very closely linked degrees with other countries (for example, master's degrees taught to various locations) it is important to have the appropriate online evaluation mechanisms that allow for appropriate interaction.” (ES-Training aspects)

“It opens door for international cooperations in educational platforms” (TR-Institutional impact)

Regarding challenges, the following quotes serve as some examples of the most populated categories:

“The challenge is to end the stigma that the presence affects in some way in learning” (ES-Assessment culture)

“Ensuring proper proctoring to avoid cheating” (BE-Academic integrity)

“That the technology works properly, to give an example - facial or voice recognition”
(ES-Infrastructures and resources)

“Accessibility, equality, prevention of undercutting or use of appropriate didactic concepts” (DE-Instructors)

Concluding remarks

The IO2 had as aim to explore, analyse, and report the perceptions of instructors, students, and administrators (stakeholders) on online assessment within the partner institutions. With that purpose, a survey study was conducted. First, three different *ad hoc* questionnaires were created for each group of stakeholders. The design of the questionnaires was based the reference framework of online assessment developed in the previous phase of the project (IO1). Then, each partner implemented and delivered the questionnaires in their institutions. Collected data were prepared for quantitative and qualitative data analysis.

The 257 collected responses corresponding to 100 instructors, 118 students and 39 administrators of the partner institutions provided a valuable overview of the perceptions of the stakeholders on online assessment, also contributing to a global vision of the situation in the four institutions, and enabled us to see similarities and differences among the groups.

One of the similarities is that most instructors and students first experienced online assessment practices with the pandemic. Also, online assessment practices indicated by instructors and students show that this assessment mode is not widespread (especially in summative assessment) and that it is limited to certain digital formats and tools. The most popular online assessment practices formats are written tasks, quizzes, presentations, projects, and written exams of closed type. Moreover, the type of tools used is in line with these results: the virtual platform with task submission tools, quiz, and videoconference system, to which students also add online office tools (Google Drive, Microsoft 365, etc.). Apart these practices, fewer number of instructors and students indicate that they feel comfortable with other online assessment practices. An exception is the written exam with supporting materials for students.

There are also differences between students and instructors' perceptions. Instructor's attitudes to online assessment were poorly defined/undecided, especially considering student reception, facilitating originality and creativity, or supporting better tracking and monitoring of the student learning process. They were positive about facilitating the situation of mobility students and the possibility of implementation of online assessment in their courses without any major problems. They indicate that better security systems are required to ensure the ethical practices of students and greater research to improve the practice. In contrast, students like to receive online feedback. However, they are also undecided regarding the aspects that online assessment is easier, that it takes more time and/or effort, that they prefer it, that it contributes more to their learning than assessment without technological means, or that it facilitates originality and creativity. In fact, almost half of students think that online assessment requires more time and effort and contributes no more to their learning than traditional assessment.

Concerning professional development, most instructors did not attend training courses on the topic or sought personalised institutional support, but most of those who have enjoyed such support indicate their satisfaction with this service. Most instructors also sought support on their own, especially from peers and on the web.

Regarding administrative staff, they state that online learning and the possibility of online assessment for the institution's future are essential, as well as being part of the institution's overall mission, vision, and strategy. At the institutional infrastructure level, most administrative personnel consider it to be adequate, although when it refers to the amount, this percentage decreases slightly and is targeted at technological resources (e.g., webcams and

microphones), infrastructure (e.g., the virtual platform) and training aspects (use difficulties of resources by time limitation, group size, etc.).

As conditions for effective implementation of online assessment, instructors highlight the following: a) pedagogy (online assessment design), b) students (learner culture, digital competencies), c) instructors (training in online assessment, digital competencies, time factor, teaching culture), d) infrastructure (equipment/general, platform, security/privacy, tools, accessibility, connectivity), institutional approach (regulations, support, legal issues); being the most relevant for them the three later ones.

Also, according to the three stakeholders' groups, opportunities and challenges of online assessment for virtual mobility can be identified. Although some of the aspects vary from one group to another, depending on the perspective, there is considerable consensus. The opportunities regard the mobility itself (e.g., saving time and money), training aspects (e.g., flexibility), the promotion of interculturality and the institutional impact. Challenges refer to the assessment culture (e.g., cultural differences), academic integrity, issues with infrastructures and resources, and the instructors (language training, workload, beliefs, etc.).

From the results of the study, recommendations are being derived for the creation of an online course for the professional development of faculty members on online assessment. This includes the consideration of attitude aspects, alternative assessment practices and online feedback, among others.