

Defining the teaching profiles of academic staff across a European universities alliance: Lessons learned after the pandemic and the way into the future

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Abstract

This study examines the teaching profiles of academic staff across a European universities alliance, explores the lessons learned after the pandemic, and outlines the path forward. Improvements in higher education systems and practices that embrace digital transition and equip academics with the necessary skills to facilitate quality learning are necessary in today's rapidly changing societies. As the COVID-19 pandemic swept across the world, educational institutions were forced to adapt their teaching practices in a state of urgency. The European University of Technology (EUt+) was not immune to the pandemic's impact. This study focused on how the eight universities of EUt+ responded to the pandemic, adapting their teaching and assessment practices. The study aimed at drawing the teaching profiles of the staff, exploring the different teaching modes before, during, and after the pandemic, and ways in which academics can exchange knowledge and value experiences related to the teaching process. The study followed the conventions of exploratory research, employing a mixedmethods approach; the data were obtained through an electronic questionnaire sent to all the members of the staff across all eight universities of EUt+ and semi-structured focus-group sessions. Findings showed that before COVID-19 the majority of the members of academic staff delivered their classes through lectures, seminars, and tutorial interaction, while traditional types of assessment such as closed book exams, project work, group work, or practical work were frequently used. Furthermore, more conventional technology tools were integrated into their teaching practice rather than new and emerging technologies. Nevertheless, the pandemic brought about several changes both in the teaching and assessment methods, shifting attention to tasks that required more use of critical-thinking skills and the challenge of limiting plagiarism.

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1. Introduction

Higher education is currently undergoing major alterations due to significant social, economic, and political changes occurring globally, and this situation is expected to intensify with the changes in the admissions due to war and immigration waves, the advent of technologies such as Artificial Intelligence (AI), and developments in pedagogy, among other factors. These ongoing societal transitions have prompted the need for acquisition of new competencies and the adoption of new pedagogical approaches that prioritize inclusive education and education for sustainability.

The global outbreak of COVID-19 came at turbulent times, when higher education was already facing many challenges with student registration numbers increasing and institutions striving to keep up with pedagogical innovations and, in many cases, proceed with the digitisation of their administrative processes. In 2020, when the pandemic struck, society experienced a disruption of all aspects of life, which imposed radical modifications in all fields, including education. Globally, the pandemic forced the closure of educational institutions, forcing students and teachers to remain confined at home. This led to adaptations in teaching and learning processes, primarily shifting from face-to-face instruction to emergency online instruction.

As every educational institution around the globe, the universities of the European University of Technology alliance [1] have not remained unaffected by all these developments. This paper presents a research study conducted in the context of the European University of Technology (EUt+), the purpose of which was to map out the teaching and assessment practices of the academic staff before, during the pandemic, and afterwards and draw insights on ways in which higher education could move forward into the future.

2. Literature Review

2.1. Recent Changes in Higher Education

During the World Higher Education Conference in 2022 [2] a roadmap was set for Higher Education in the next decade. This roadmap emphasises the need for co-creation of more open, inclusive, equitable and collaborative higher education systems, which respond to global challenges guided by principles that promote public good and quality education. It also encourages higher education systems to build partnerships that put sustainability at the core and use technology inclusively and creatively. Similarly, the European Commission launched several initiatives the purpose of which is to ensure the relevance and quality of higher education; these initiatives involve the promotion of the development of more programmes based on STEAM approaches (science, technology, engineering, the arts, and mathematics) and the support of graduate tracking [3]. The European Commission also placed emphasis on inclusive and connected higher education as well as innovation in higher education. Another important development was the setting of the United Nations Educational, Scientific and Cultural Organization's (UNESCO) 2030 Agenda for Sustainable Development [4]. According to UNESCO, higher education has "the responsibility of co-creating knowledge and innovations that allow progress in the 17 Sustainable Development Goals (SDGs)."

Simultaneously, socio-political, economic, and technological developments globally affected higher education, creating great challenges for universities. With numbers of students increasing year by year, higher education institutions strive to keep up with digital transformation, the development of distance education, the spread of MOOCs (Massive Open Online Courses), and the orientation of higher education towards lifelong learning [5]. In an effort to stay abreast of the latest developments in theories of learning and how these impact pedagogy, universities adopt more student-centred approaches to teaching and learning, supporting students in collaborating with each other, a practice that students continued after the outbreak virtually [6].

The pandemic intensified all these overarching challenges and opportunities. With the outbreak of COVID-19, higher education was confronted with unprecedented circumstances, which generated greater challenges and new realities for institutions.

2.2. Higher Education Institutions' Response to the Pandemic: Challenges and The Way Forward

Literature from all over the world shows the different ways in which higher education institutions handled the crisis, with some institutions being more prepared and better equipped to address the challenges that the pandemic gave rise to than others Mseleku [7]. Bartolic, et al. [8] describe the situation across eight higher education institutions in Australia, Belgium, Canada, the Netherlands, Philippines, and the United States of America, focusing on course instruction and the teacher. The researchers characterize the situation at the beginning of the outbreak using the metaphor "herding of cats," explaining that everyone proceeded independently, trying to cope as well as possible under the circumstances [8]. Other studies report on the state of higher education institutions in South Africa [9] Russia [10] Spain [11] Greece [12] Philippines [13, 14] Ghana [15] Serbia [16] China [17] India [18, 19] Indonesia [20, 21] Morocco [22] and other countries. Generally, teaching and learning occurred either in blended/ hybrid or fully online modes with integration of tools such as LMSs (Learning Management Systems, i.e., Moodle, Blackboard, Microsoft Teams, Google Classroom), the use of teleconferencing platforms such as Zoom, Google Meet, Big Blue Button, etc., as well as email, online chat, bulletin boards, and other tools for online communication. Apart from the use of more technology tools for teaching and learning, the situation also had an effect on course design and procedural issues, such as learning objectives, assignments, assessment processes, grading weights, and grading standards.

These educational modifications generated challenges that higher education educators were required to overcome. Going online could not be easily applied in all cases, especially if courses were delivered in laboratories or involved practical sessions, for example, STEM (Science, Technology, and Mathematics) courses [23]. Other challenges reported were the lack of academic staff and students' digital literacy, the absence of appropriate support by the university and the lack of readiness

to respond to the demands of online learning [10]. Most importantly, in literature, emphasis is placed on the fact that online pedagogy was new to most higher education institutions [10, 24].

Apart from the practical and technical difficulties faced, the request for faculty to promptly transform instruction in response to the physical distancing measures was also challenged by several psychosocial factors that influenced both members of the academic staff and students [25]. Such challenges are related to health issues caused by COVID-19 and the need for hospitalisation in many cases or taking care of family, friends, or relatives; unemployment or instability in work schedules; lack of equipment or private space at home to be used for educational purposes; distractions caused by the environment, etc. As Neuwirth, et al. [25] support, students often showed lack of engagement and lack of virtual class etiquette, which, in combination with faculty expectations, made the delivery of online classes more challenging.

Despite all the challenges identified in the literature, according to Joaquin, et al. [24] the outbreak of COVID-19 not only forced educational institutions to think about the technologies for delivering education but "also compelled us to rethink the very nature of education itself." Notwithstanding the chaos and devastation that the pandemic brought about, education benefited from the fact that educational systems had to transition to fully online modes, and educators had to think of ways in which technology could be used in pedagogically sound ways. This was an opportunity for institutions in general and teachers and students in particular to realise the need for technological improvements and digital literacy [23] and to consider the very essence of pedagogy [24].

Looking back at how higher education institutions responded to this crisis, many lessons were learned in relation to the future of Higher Education. Amaechi, et al. [23] identify a general gap in annotated bibliographies on issues such as student assessment, teaching, and group learning in higher education and claim that more effort should be made towards bridging this gap in the literature. Similarly, Neuwirth, et al. [25] support that the way forward is not the "resumption" of the educational process as we knew it, but rather the "re-envisioning and re-imagining" of the design and delivery of the curriculum. García-Morales, et al. [26] suggest that universities should harness the potential of technology available to enhance the learning experience and to meet students' expectations. Furthermore, as education is embracing connectivist approaches to learning [27] other important aspects that should be taken into consideration are organisational readiness, technical infrastructure and support, and flexibility in structures that empower faculty members; these, along with keeping the faculty members up-to-date with the latest developments in technologies, should be in every university's agenda for the future [11].

3. The Background and Purpose of the Study

The European University of Technology (EUt+) alliance was created as a response to the challenges humanity faces nowadays, such as climate change, rising inequalities, the social consequences of rapid technological advancements, and many more, and also as proof that European higher education has an important role to play in this context. EUt+ is comprised of nine technological universities, that is, University of Technology of Troyes (UTT), Darmstadt University of Applied Sciences (HDA), Riga Technical University (RTU), Technological University Dublin (TUDublin), Technical University of Sofia (TUS), Cyprus University of Technology (CUT), Technical University of Cartagena (UPCT), Technical University of Cluj-Napoca (UTCN), and the latest addition, the University of Cassino and Southern Lazio. The alliance aspires to create a new European model of education that fosters inclusivity, high-level scientific education and research, and creates responsible citizens [1].

The EUt+ alliance's collaborative efforts to develop an innovative model for European education, along with the pandemic's impact on educational processes, served as inspiration for this study. It involved an effort to compile the teaching profiles of the academic staff all across the eight universities of this alliance (the University of Cassino and Southern Lazio joined the alliance towards the end of 2023, so its academics did not take part in the study). Its purpose was to explore different teaching modes across the EUt+ alliance before, during, and after the pandemic, as well as to explore ways in which academics can exchange knowledge and value experiences related to the teaching process. The research questions underpinning the study were the following:

- 1. What types of teaching methods do members of the EUt+ academic staff employ?
- 2. What types of technology tools do members of the EUt+ academic staff use in their teaching?
- 3. How did teaching and assessment practices change during the pandemic?
- 4. Which practices would they like to keep for the future?

4. Methodology

This exploratory research study was carried out across all eight universities of the EUt+ consortium at the time. Exploratory research refers to research conducted when there is a lack of knowledge on a particular topic or when the information known is little and further exploration of the topic is needed [28]. As aforementioned, the main objective was to investigate academic staff's teaching practices before the pandemic period and to see how these practices developed during the confinement and what lessons can be learnt for the future. For this purpose, a mixed research methods approach was used, and both quantitative and qualitative data were obtained. Participation in the study was voluntary; participants were informed about the purposes of the study and all the relevant processes involved, and all the necessary measures were taken to secure the anonymity of the participants. The study was conducted after permission was obtained by the Cyprus National Bioethics Committee (reference number EEBK EII 2022.01.150).

4.1. Data Collection and Analysis

Two research tools were used to elicit data for purposes of triangulation; according to Babbie [29] research should employ more than one research method for more reliable and in-depth findings. In this study, the researchers used a questionnaire and semi-structured focus groups (see Appendices). First, the questionnaire was comprised of 19 closed and open-ended questions, and it was administered electronically to the participants across all eight universities using Microsoft Forms, and descriptive analysis was used to report the results. Prior to its actual administration, the questionnaire was pilot tested with participants from all eight universities, and appropriate amendments were made. The first phase of this study produced 213 responses to the questionnaire.

We then sought to supplement these results by organizing focus groups. According to Acocella [30] if organised and carried out properly, focus groups reveal "the collective and public dimension of opinions." More specifically, three one-hour semi-structured focus groups were organised, which brought together an average of eight participants from the various partner universities. These sessions were carried out using Microsoft Teams videoconferencing platform. A total of 22 participants participated in the discussion. Thematic analysis was applied to identify relevant patterns and themes within the qualitative data obtained.

4.2. Participants

A total of 213 members of the academic staff from all eight universities of the EUt+ alliance responded to the electronic questionnaire, with the majority of the respondents being employed at TUDulbin, HDA and the CUT (Table 1).

Table 1.

| Questionnaire respondents. | | | |
|----------------------------|--|--|--|
| University | Number of respondents to the questionnaire | | |
| UTT | 20 | | |
| UTCN | 4 | | |
| UPCT | 2 | | |
| HDA | 48 | | |
| CUT | 37 | | |
| RTU | 11 | | |
| TUDublin | 55 | | |
| TUS | 25 | | |
| Other | 1 | | |

Note: UTT= University of technology of Troyes, UTCN= Technical university of Cluj-Napoca. UPCT= Technical university of Cartagena, HDA= Darmstadt university of applied sciences, CUT= Cyprus university of technology, RTU= Riga technical university, TUDublin= Technological university Dublin, TUS= technical university of Sofia.

As far as the participants in the focus groups were concerned, these were mainly members of the academic staff across all the eight universities, who had responded to the electronic questionnaire and expressed their wish to contribute to focus group discussions at a later stage. These academics came from TUS (n=3), HAD (n=1), UTCN (n=8), UPCT (n=2), TUDublin (n=3), and CUT (n=1).

5. Results

The questionnaire that was administered to the participants in the study yielded information pertaining to the teaching methods used in these higher education institutes, the use of technology for educational purposes, and the assessment methods employed in general and during the pandemic in particular, as well as ideas for the future. These results were enriched and enhanced by the findings of the focus groups.

First, the researchers aimed to identify the respondents' teaching and research fields in order to find out whether teaching methods could be dependent on teachers' professional backgrounds (Table 2).

| Table 2. | Ta | ble | 2. |
|----------|----|-----|----|
|----------|----|-----|----|

| Respondents' teaching | ng and research fields. |
|-----------------------|-------------------------|
|-----------------------|-------------------------|

| What is your primary area of teaching? (Numbers of responses) | | What is your primary area of research? | |
|--|----|--|----|
| | | (Numbers of responses) | |
| Engineering | 53 | Engineering | 48 |
| Business | 35 | Business | 30 |
| Science | 23 | Science | 22 |
| Languages | 22 | Languages | 21 |
| Computers | 21 | Computers | 19 |
| Built environment | 10 | Built environment | 18 |
| Pedagogy | 9 | Pedagogy | 10 |
| Humanities | 8 | Humanities | 9 |
| Creative arts | 6 | Creative arts | 7 |
| Health | 3 | Health | 3 |
| Other | 37 | Others | 36 |

Under the category "other," other disciplinary fields were proposed: tourism and hotel management, law, architecture, media and journalism, ecology, and agricultural sciences. Furthermore, 4 respondents indicated that they did not conduct any research, indicating that the majority of the respondents were teachers who were also engaged in research.

It is important to note the wide diversity of respondent profiles, as the eight partner universities cover very broad fields of knowledge. This is interesting, as it gives us a global view of the different pedagogical adaptations occurring across a variety of disciplines.

Then, as shown in Figure 1, teaching practices before the Covid situation were investigated through the provision of a list of pedagogical practices that respondents were asked to rank according to their frequency of use (never, rarely, sometimes, frequently, always).



Figure 1.

Frequency of use of different delivery methods as a percentage of the overall course delivery.

Upon initial observation, several significant patterns seem to emerge. The majority of the participants in the study used lectures, seminars, tutorial interaction, virtual lectures, and virtual tutorials nearly all the time. Testing labs or computer rooms for demonstration were moderately used, despite the fact that these practices are directly linked to the discipline taught. Finally, fieldwork (immersive/practical/travel), work experience (practical/external support), workshops, international/overseas practice were reported as rarely used. It is also worth mentioning that teaching through projects, coteaching, and flipped classrooms were also among the teaching modes reported by the respondents.

Apart from teaching methods, the study yielded useful results in relation to the assessment practices before the Covid-19 outbreak (Figure 2).



Figure 2.

Frequency of use of assessment methods as a percentage of the overall assessment.

As illustrated in the figure, closed book exams, continuous assessment, project work, group work, or practical work were very frequently used. In the meantime, oral examination, and open-book exams were moderately used. The respondents also mentioned problem-solving, online assessment, and video production as methods to evaluate students. The teachers who participated in the focus groups also reported as a general inclination towards face-to-face, traditional modes of teaching and assessment before the Covid outbreak.

Another parameter that was examined in the study, as shown in Figure 3, was the use of different technologies in teaching before the Covid outbreak by the members of the academic staff across the eight universities of the EUt+ alliance, in order to understand whether during the Covid period teachers were already comfortable using digital tools to teach.

Computers, LMSs (e.g., Moodle), overhead projectors, and teleconferencing (e.g., Zoom) were very often used by the teachers during their teaching sessions. Smartphones or tablets, cloud technologies (e.g., Dropbox), social media, and interactive whiteboards were moderately used. Finally, games, virtual reality tools, augmented reality tools, robotics, or drones were rarely used. In the category "other," academics mentioned tools such as Mentimeter, blogs, and desk cameras. Therefore, it can be inferred that the majority of the members of academic staff made use of more traditional and conventional technology tools in their teaching practice rather than new and emerging technologies.

Teachers were also asked whether they adapted their teaching and assessment practices during the Covid period (Figure 4). As Figure 4 shows, the vast majority of teachers were forced to adapt their assessment practices during the pandemic, most of the time examining their students online. This was also evident in teachers' responses in the focus groups.

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Figure 3. Frequency of use of technology tools for teaching.





As focus groups revealed, online instruction brought about many challenges that both teachers and students had to overcome. First of all, there were challenges of practical nature, such as inadequate knowledge of handling technology tools, lack of appropriate equipment, and limited internet access, especially with students from disadvantaged backgrounds. Teacher 4 stated:

"Students from disadvantaged backgrounds did struggle more. Some students struggled to find a quiet space where they could listen and engage in their studies. Others in terms of their accommodation".

The new reality required a tremendous deal of work, which went beyond the class time scheduled in the timetable. In this regard, teacher 3 said:

"During the pandemic, I put my research activities on hold, as all my time was taken up by teaching."

Nevertheless, there were teachers who claimed that teaching online allowed them to devote themselves more effectively to their research activities.

"Working from home can have an advantage; it provides more time to get research done and allows for more efficiencywe call this the 'mole day' where we hide away." (Teacher 3).

Some teachers delivered their lectures synchronously, while others produced short videos to explain simple concepts. Students could view these videos offline.

"We could use video tutorials to provide a basis of knowledge that the students can access in their own time" (Teacher 2).

It is also worth noting that some teachers noted that students lost certain skills during the pandemic period, such as information selection and the ability to maintain attention while learning.

"Returning to a pre-COVID situation has resulted in a less curated version of knowledge. The students had to carefully consider what was important to present" (Teacher 6).





Figure 5.

What were your main considerations when switching to online assessments.

The majority of respondents adapted their assessment practices during the pandemic. Many educational institutions across the globe may have adapted their assessment practices due to personal desire or as part of a set of general measures. As shown in Figure 5, these changes in assessment processes came along with several considerations. Academics prioritized ensuring integrity. Other respondents highlighted the fact that they wanted to set up assessments that were fair and motivated learning.

In addition to these considerations, the adaptation of the assessment practices presented a number of challenges, as the focus groups revealed. Limiting cheating and fraud during the exam was the most serious challenge faced by teachers during the pandemic. During this period, a large number of students established networks, making it easy to conduct individual assessments collectively through student-run WhatsApp or Discord groups. Teacher 4 said:

"Assessment was a particular challenge-both in terms of ensuring student integrity, in terms of the timing of the online assessments and also in terms of devising a suitable method."

For this reason, teachers stated that instead of designing exams that were based on rote learning and memory assessments, attention had to turn towards critical-thinking-based examinations; the questions asked were of a more sophisticated cognitive level than the simple restitution of knowledge. According to Teacher 2, despite the challenge, this was beneficial for the students. Other challenges that teachers faced included dealing with plagiarism and determining whether students could understand and follow the lesson. In this context, teachers created question banks so that multiple-choice type tests were different for each student, thus limiting fraud during assessment. Still others adopted open-book tests. Teacher 5 stated:

"The online exams initially had some issues, but we changed how we ran the assessment. We moved to open-book exams we did have the students' cameras on, but we thought about it as setting questions for each student. The students were required to solve their own problems".

When teachers were asked whether they had received any training in using technology, 29% of them responded "no" or thought that they did not need training. The training that the rest of the academics had received took place in the form of workshops and webinars or online training.

The study also yielded results pertaining to pedagogical changes that they would like to be introduced by universities in the future as a result of the lessons obtained during the Covid period. Many of the respondents (n=25, 21%) expressed the view that online teaching would continue, along with a hybrid model of teaching online assessment and flipped classrooms.

"All materials are available online now, both the practical examples and the theoretical information. We structured the information to be available online, and now we have decided to keep it." (Teacher 7).

The academics participating in the study expressed these opinions. Policy-wise, there did not appear to be a change in the overall strategy of the institutions participating in the study.

6. Discussion

The results obtained from this study show that the majority of teachers surveyed taught mostly in a traditional way before the pandemic, i.e., face-to-face, using mostly teacher-centered methods such as lectures and tutorials with little use of technology, relating to the use of computers, overhead projectors, and LMSs. This showed that most of the academics participating in the study had not yet embraced student-centered teaching approaches, and digital transformation still had a long way to go, despite the fact that innovation and the integration of technology are being emphasised by the European Commission and other fora.

These results are in line with claims made by other researchers, such as García-Morales, et al. [26]. The health crisis, accompanied in many countries by confinement, forced teachers to switch to distance learning methods in a very short time. However, even in cases where the concept of "e-learning" was not new, and efforts to adopt digital transformation started years ago [23] the peculiarity of the special circumstances made transition to online instruction challenging. The most serious difficulties encountered do not seem to be related to technical aspects (many teachers seem to have already mastered e-learning and videoconferencing platform systems) but rather to the question of interactivity, which is one of the most important principles of student-centered learning [31]. As teacher 1 said, "*Online it is just a movie – so you need to ask more questions*." As recorded in the findings, the abrupt switch to online modes of teaching brought about other challenges as well. In many cases, teachers and students lacked the knowledge needed to successfully integrate technology tools in the teaching and learning process. In other cases, teachers talked to black screens (the students' cameras were switched off), and this made it difficult to ensure proper knowledge transfer. These kinds of challenges are in agreement with Neuwirth, et al. [25] findings pertaining to students' lack of engagement and virtual class etiquette. In face-to-face teaching, interaction with students is an important lever for increasing learning efficiency. Some members of the academic staff adopted flipped classroom approaches to increase student engagement.

Once the teaching adaptation phase had been completed, the assessment methods had to be adapted too. As in other studies García-Morales, et al. [26] and Jereb, et al. [6] this was quite challenging. The results of this study showed assessment processes had to occur online and that teachers' major concern was how to limit the possibility of cheating and plagiarism. To achieve this, they mostly turned to problem-based, open-book examinations and assessed activities that demanded critical thinking skills.

Despite all the challenges encountered during the pandemic, some academics expressed the view that the enforced switch to online teaching and assessment modes was also beneficial in some cases and brought about changes that could determine the future of higher education. This finding is mentioned in other studies too [5, 12] and it carries important implications for the way forward in higher education. On returning from the Covid period, many teachers retained methods developed during the pandemic. Teachers left online resources freely available to students as a complement to a face-to-face course.

Therefore, it could be claimed that the pandemic, first of all, revealed the need for academics to keep abreast of the latest developments in pedagogy and the integration of new and emerging technologies in their teaching practice. Higher education institutions have the responsibility to provide teachers with all the necessary opportunities for training and professional development in this area [11]. The example of the forced implementation of online teaching and learning during the pandemic proved that even members of the staff with limited digital literacy can embrace transformation and change. Through appropriate support, both in terms of equipment provision and in terms of training in state-of-the-art pedagogical practices, Higher education in Europe and beyond can proceed into a future of a more inclusive and equitable Higher education built on the principles of sustainability and transdisciplinarity.

7. Implications of the Study

This study aimed at describing the teaching profiles of academic staff and the changes in teaching and assessment occurring during the pandemic across the universities of the European University of Technology (EUt+) alliance. The

broadness of the sample of participants in the study is what makes the insights of the study significant, not only for university alliances across Europe but for all higher education institutions globally. It would also be interesting for future research to see how the teaching and assessment processes will develop in the future; it would be also interesting to examine how higher education institutions will support academic staff in their effort to keep up with the developments in pedagogy, including the integration of new and emerging technologies, such as AI, in the educational process.

8. Conclusion

The pandemic broke in a period when higher education faced a lot of challenges already, with student numbers increasing, new technologies being introduced, students' transversal competencies gaining a place across curricula, and humanity turning to more sustainable ways of living. Covid changed teaching and learning habits worldwide overnight, forcing academics to deliver their classes online synchronously or create resources that students could consult remotely. Despite the chaos caused, the pandemic could be referred to as a turning point in the history of education, as focus had to be placed on the essence of the educational practice. Over and above technological adaptation, it appears that many teachers contemplated and reflected on the pedagogical practices that would enable them to maintain the quality of their lessons by sustaining interactivity as much as possible during online course sessions. Simultaneously, assessment practices were adapted to protect integrity, which led to a change in assessment methods (continuous/formative assessment and open-book exams that required employment of critical-thinking skills). Some of those practices are still being used by academics in universities. The challenge now for higher education is continuous professional development for academic staff, which is based on quality education that embraces new and emerging technologies and caters to sustainable development and public welfare.

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