

## Problems and prospects of hybrid learning in Higher Education

Semi-structured questionnaire used in online interviews:

1. We have endured a year of disruption in educational practices due to the COVID-19 pandemic. What kind of changes would you say took place in Higher Education?
2. What drivers and barriers did you experience in your teaching during the COVID-19 pandemic?
3. Can you describe any new experience with tools or e-learning processes used for remote teaching during last year?
4. Did you use different digital channels for communication with students and fellow academics? Please give some examples.
5. Did you use digital assessment formats to monitor student progress or for final exams?
6. Did you take any specific steps to protect sensitive content, e.g. exams, students' grades, personal data?
7. Did you participate in online training opportunities such as webinars, online courses, MOOCs, conferences?
8. Is there a perception that creative media can improve motivation, for instance, supporting new pedagogies such as gamification, storytelling, and collaborative learning?
9. In your opinion, what are the most important stakeholders concerning the decisions for digital transformation in Higher Education (for example, politicians, businesses, institutions, open universities, other universities)?
10. What changes do you think will impact the evolution of Higher Education in the post-pandemic future?

Interview transcript of answers to each of the 10 questions (Q1-Q10), after removing redundant and less relevant information:

Q1. *Changes during the pandemic.* It is clear that the COVID-19 pandemic has brought new challenges to higher education, demanding innovative strategies and the adaptation to a new reality.

- a. classes were forced to move to remote models (online) in a very short time;
- b. lecturers and students had to adopt new technology and new skills;
- c. lecturers and students worked from home most of the time;
- d. there were changes in terms of policies and practices (vivas, exams, meetings);
- e. younger students joined open universities and polytechnics, and overall student numbers increased 20-25%;
- f. institutions were able to keep all the courses active so none was cancelled;
- g. after autumn (2020) different strategies were chosen, in some cases students went once a week, others chose between alternate days, others did all theoretical classes online and just the practical laboratories on site;
- h. those institutions that had scalable e-learning platforms absorbed increases in workload for faculty and support services better than others;

- i. changes included editing down old recordings of lectures or creating new videos altogether, and rethink interaction with students;
- j. the rapid decline of international enrolments relieved pressures in some areas (accommodation, welfare, and student support) while putting significant pressure on financial resources (AUS & NZ);
- k. most universities were unprepared for an unexpected online teaching engagement (AUS);
- l. emergence of a real unawareness of what constitutes online learning from a pedagogical perspective (AUS);
- m. diverging from Europe, Higher Education is very much run like a business in Australia, and because of the pandemic hundreds of staff lost their jobs.

Q2. *Drivers and barriers* (pros and cons). Even though in general the transition has been rather satisfactory, in many specific educational areas the challenges seek to persist.

- a. (pro) challenge of change teaching in institutions within a short time frame;
- b. (pro) development of a much more inclusive learning environment;
- c. (pro) implementation of teaching programs based on online and hybrid learning;
- d. (pro) enabling digital access to materials and support through technology;
- e. (pro) lecturers had to learn several technologies that they were not used to so they could be quick in responding to students;
- f. (pro) lecturers and students are now using Zoom and Teams proficiently;
- g. (pro) institutions in New Zealand benefited from strong and clear government directives at the beginning of the COVID-19 crisis;
- h. (pro) all the Australian universities are far more mature in terms of digital infrastructure for online learning than most European universities because they are much larger (a small Australian University has 40,000 students; Monash has 95,000 students)
- i. (pro) teaching support systems at the Open Polytechnic (NZ) were designed to flex with scale;
- j. (pro) institutions were required to adjust some assessment protocols (including proctoring) with the inability for on-site examinations to be held;
- k. (con) there were issues with electronic exams and tests because of students cheating;
- l. (pro) the threshold for a student to ask a question during a session has been lowered tremendously (students are more comfortable typing in the chat);
- m. (pro) emergence of more Q&A sessions as students worked from home and had the support of a teaching assistant;
- n. (con) lack of adequate social contact among students and with lecturers;
- o. (con) with so many online sessions there was more superficial learning;
- p. (con) even brilliant students need to concentrate and do some practical work instead of just listening to the teacher online;
- q. (con) it is quite challenging having to record lectures but many of the students have said they really valued the recorded lessons;
- r. (con) academics are not competent instructional designers for online platforms;
- s. (con) there was a lot of network traffic in the platforms due to a huge increment in online sessions;

- t. (con) many institutions were more willing to invest in technology rather than in staff's ability to leverage that technology;
- u. (con) many universities still see learning as a body of information that teachers regurgitate and redeploy, rather than an academic setting prepared for asking the right questions;
- v. (con) technology and pedagogy are important but there is evidence that with Zoom and Teams you can't communicate easily with a large group;
- w. (con) many students complained that the value they were receiving from online learning was not the same as attending face-to-face classes (AUS).

Q3. *New experiences* (tech innovation). The recent experience showed that there is a need to identify both the solutions and limitations of the models currently in use, encompassing a diversity of cultural and educational perspectives.

- a. we just transposed face-to-face classes to remote classes with Zoom;
- b. MS Teams allows students and teachers to keep in touch with each other for community building purposes and also works as a repository of documents;
- c. most universities had to substantially invest in terms of technology (for Zoom sessions and video lectures);
- d. using Webex and other tools for lecturing was a positive change for everyone;
- e. lecturers are now doing a lot of research in e-learning;
- f. UNED had to develop software (it was in a prototype phase), to proctor online exams (in one year, we delivered nearly 800,000 exams);
- g. the proctored characteristic of the software required a web camera to take frequent shots during an exam (UNED);
- h. in online learning the building capacity to take the three-dimensional space in Rhino was used, and set up like a virtual gallery space (UTS/AUS);
- i. Rhino software allows students to chat, capture and record drawings (UTS/AUS);
- j. introduced Miro to facilitate graphical communication and tested Wonder, as it allows a teacher to set up different tracks (DK);
- k. the lecture had to be replaced with a video alternative, but video-capture of lectures has been a standard practice for 10 years in Australia;
- l. there was a need to have some sort of online activity, like a workshop or practice, because students wanted more than recorded lectures (AUS);
- m. we used a myriad of tools, such as Padlet, Poll Everywhere, Mural, Socrative, Slido, and everyone is now very skilled in these tools (UNSW/AUS);
- n. the Open Polytechnic (NZ) has an established technology platform called iQualify, and is continuing to expand its functionality;
- o. Jitsi is an open-source alternative to Zoom that we use for lab sessions, it's hosted within the university, and we use Queue for our online exams (NL);
- p. We've been using Stack Overflow as an alternative to our forums, and, compared to our previous electronic learning environment, students are much more likely to answer each other's questions here. Our plan is to put some sort of chatbot or AI behind this, but this is still in development (NL);
- q. the entire course was set out and the different units, different modules, the readings, the video clips, the discussion forums, all based on Moodle (UCL/UK).

Q4. *Communication channels used* (digital platforms). It's apparent from the answers received that ingenuity and innovativeness have provided the ability to deliver education in non-standard circumstances through the available channels.

- a. we just used email and the existing institution's platforms (UC/PT);
- b. the Open University (UK) didn't allow the use of Zoom because of data privacy issues, so primary vehicles were both Adobe Connect and MS Teams;
- c. we use mainly WebEx but also have social media channels with students (AT);
- d. we have Discourse (online forum) for our students (AT);
- e. we explored more the Teams and Sway services from Microsoft (UNED/ES);
- f. we have our own Moodle platform for continuous education but we are thinking about adopting the Canvas platform (UNED/ES);
- g. every week I used Zoom, Teams, Meets, Hangouts or Adobe Connect, depending on the link available (UNED/ES);
- h. we have adopted Microsoft Teams across the tertiary sector, primarily used amongst staff, rather than with students (NZ);
- i. there has been significant expansion in students' use of Facebook for extra-curricular communications (NZ);
- j. the interaction tool we used it's basically an app that feeds into Rhino, having the operability of being able to record, draw and have a conversation (AUS);
- k. at Copenhagen Business School we use Moodle, Canvas and Hangout from Google (DK);
- l. at least 80% of the Australian universities use a service called Studiosity. It is an online service for students that operates 24/7, and it's a writing and study coach service. It's a market-led approach because the students are seen as customers;
- m. Moodle is the baseline platform but, in terms of communication, it's mainly Zoom, Teams, and Collaborate Ultra from Blackboard;
- n. there are established communication channels for student contact and these, largely based around email, coped well with the increased demand;
- o. the OPNZ had rolled out Microsoft Teams in late 2019, with extensive training, and went into COVID-19 disruptions with established protocols in place;
- p. we have a learning platform for all course materials, then we have Stack Overflow for Q&A. In some courses, specifically the project-based courses, they also use Mattermost, which is an open-source alternative to Slack, used for daily communication between students in the same group (Delft/NL);
- q. We started off on Teams, because that's what we used in house, but we very quickly moved to Zoom after just the first or second week, because students were having trouble accessing what we were doing on Teams (UCL/UK).

Q5. *Digital assessment* (tests and exams). Both assessment and instructional design had a strong push, and we are going to see a continuation of this in the near future, but some issues are still open for discussion (proctoring, fraud, plagiarism).

- a. the Testportal software was used;
- b. the Open University (UK) moved away from face-to-face exams (less than 40%);
- c. most of Open University (UK) assignments are completely online;
- d. we used our customized Moodle system for assignments and exams (TU Graz);

- e. for exams we ask the students to switch on computer cameras (TU Graz);
- f. it was very difficult to work with the current platform that we call AVEX (Aula Virtual de Examen), because there are a lot of missing features (UNED/ES);
- g. (at UNED) different areas require different exams, with different types of answers, with images or video, and some require a written essay;
- h. (at UNED) in some courses there are thousands of students that regularly use a lot of testing, for example, so there is a need for proctoring that takes frequent snapshots of students;
- i. the sector as a whole moved more to change the nature of the assessments rather than to find digital equivalences (NZ);
- j. there was a significant increase in smartphone submissions of audio and video assessments (NZ);
- k. I'm a big believer in progressive assessment (of portfolios) and that means exams are particularly useless, however, some staff members have produced quizzes as part of the supplementary learning tasks (AUS);
- l. assessment was based on portfolio assignments over an entire semester (DK);
- m. we used several examination types, written exams, oral exams, also online oral exams, and during the teaching sessions I've used lots of polls (DK);
- n. Zoom breakout rooms are a very powerful tool for assignments, especially when combined with collaborative tools, such as Google Docs or similar;
- o. 15 years ago, in New Zealand, we were piloting online proctoring, using Criterion, which is one of the better-known systems, but more recently there hasn't been a huge amount of appetite for online proctoring;
- p. most people just shifted or cancelled their examinations and moved to continuous assessment. To introduce a proctoring infrastructure under emergency remote teaching conditions is a recipe for disaster (DCU/IE);
- q. we relied essentially on grading case studies. The goal was to define cases where students could apply theory to practice (UNSW/AUS);
- r. learning designers were very helpful in defining how to approach online learning, and online exams or tests were all going on inside Moodle (UNSW/AUS);
- s. exams showed more plagiarism so it's not enough to have Turnitin running, because students are very sophisticated nowadays (AUS);
- t. Open Polytechnic (NZ) has been working on over the last decade to move its assessment into digital formats, so nothing changed with COVID-19;
- u. In the master program we changed into a project-based alternative, for instance, a small project, a presentation, a paper, or something like this (Delft/NL);
- v. We have relatively few proctored exams. Instead, we have developed several other anti-fraud measures. One of them is post-exam interviews (NL);
- w. we use exams that contain at least some open questions so that different students get different exam questions. We do this with randomization of questions, time limits and alterable question order. And then we may use post-exam interviews, where we interview as many as we can (NL);

Q6. *Privacy and security* (proctoring, GDPR, etc.). This was not a major concern in a time of emergency but the implications for digital transformation in the following years triggers some apprehension.

- a. we use the waiting room tool in Zoom to control the entrance of classes' participants;
- b. since 2014 the Open University (UK) has an ethics policy on how to use personal data;
- c. when running synchronous sessions participants are asked to accept recording for academic purposes;
- d. we didn't have to do anything out of the ordinary except the proctoring system for exams, that required some attention because it's something new (UNED);
- e. before students enter any online examination, they must click or state that they agree to the conditions;
- f. There is recent data protection legislation in New Zealand which has meant all institutions have been forced to re-evaluate their policies and processes before COVID-19;
- g. With Zoom there were issues, including students who weren't enrolled, attending, disrupting class, sharing the screen with pornography, all those types of things (AUS);
- h. we do use proctoring tools to make sure that people online are the people they claim to be. They are required to show their student registration card, but I've not at all thought about GDPR and things like that (DK);
- i. there's been an overreaction by a small community of educators, because online proctoring must have a role in the future (NZ);
- j. in New Zealand there was a very well profiled Chinese owned company based in Auckland that was selling essays to students. A student could submit the essay topic and within about 36 hours they would get an originally written essay for a fee. New Zealand had to change the Education Act to make it illegal.
- k. there are no particular measures regarding online teaching, we used the same measures that we already had in place (AUS);
- l. The Open Polytechnic NZ has not been required to take any special steps about data protection and privacy. Although going forward we are exploring alternatives to in-person examinations which will likely raise these issues;
- m. The university has been very transparent about the negotiations and contracts with proctoring suppliers, and about what data is stored for how long, etc. Within the computer science programs, both bachelor and master, we see proctoring as our last resort (NL);
- n. It's probably a decade or more UCL has been using Moodle for student assessments, keeping track of marks, records, etc. It has all been part of the process. So, nothing changed because of COVID-19 in that respect (UK).

*Q7. Online training* (for teachers and researchers). As expected, the fast response needed during the COVID-19 pandemic implied a rise in technical and instructional online training related to the use of digital platforms and tools for educational purposes.

- a. a lot of webinars for staff training took place at the Open University (UK);
- b. we had many conferences and training on the job using Webex (AT);
- c. one cannot compare training sessions on the job with conventional training outside the university (more motivating) (AT);

- d. even though I was completely overloaded with work it was nice to have some more training related with technology. Every week we had at least one or two webinars (UNED/ES);
- e. at Copenhagen Business School, every two weeks, there's a one-hour seminar on specific topics;
- f. we organized a webinar series in response to the COVID-19 and introduced European and US contributors that were lesser known within the Australian and New Zealand communities;
- g. we had training about things like how to use Turnitin more effectively, or how to set up questions in Moodle (AUS);
- h. there have been significant opportunities for webinar participation for internal professional development during the pandemic (NZ);
- i. we have a unit called Teaching and Learning Services, and they offered weekly webinars on a variety of topics, mostly related to online education (NL);
- j. I haven't had any specific training to help me teach online during this period (UCL/UK).

Q8. *Use of creative media* (pedagogy innovation). Creativity and innovativeness have provided the ability to deliver education in non-standard circumstances. But at the level of pedagogical innovation very little was done in practice.

- a. new digital media have potential but there was no time to explore;
- b. the pandemic has not changed the approach to instructional design (UKOU);
- c. there's been a gradual shift towards making online content more engaging;
- d. we didn't have the time to invent new collaborative activities or anything creative;
- e. the skills learners are required to evidence on completion determines whether 'new' pedagogies are appropriate (not related to COVID-19);
- f. gamification is too much about entertainment, perhaps immersive environments that create new visual languages might impact the way students visualize real artifacts (architecture) (AUS);
- g. I really subscribe to the idea of collaborative learning and storytelling. I have lots of videos and quotes that really illustrate how important passion is and it all goes with narrative;
- h. someone who is a deep learner, learns because he yearns to learn, that is intrinsic motivation. A gamification approach can be counterproductive to that;
- i. there are several online activities and media that is recorded, and so, we had a team doing the video recordings and the post-production (AUS);
- j. we have accelerated our use of learning analytics to enable student mentors to be more targeted in their responses. As a primarily asynchronous institution, the emphasis has been of developing quality courseware that an autonomous student can navigate their way successfully making use of whatever appropriate interactivity is designed for them (NZ);
- k. some courses have invested in creating videos, or creating a more blended experience, and they are more innovative in that way. But I would say we've been so busy with online teaching that we couldn't focus elsewhere (NL);
- l. we still use a very traditional approach to teaching, even though we're talking about non-traditional things (UK).

Q9. *Digital transformation stakeholders* (who drives change). Changes in Higher Education require planning, commitment, and collaboration. The creation of a whole infrastructure to support governance and management towards hybrid education is still needed. So far, we see the existence of very undefined scenarios.

- a. main drivers are politicians and the institutions, that's why courses are accredited for face-to-face classes instead of remote ones (PT);
- b. digital transformation is determined by how teachers design courses but at macro level there are mainstream disciplines and a national policy (OU/UK);
- c. we have now more skilled teachers using e-learning technology and driving change (TU Graz);
- d. I don't think universities were really pushing for e-learning, it was more the need for this combination of online with face-to-face learning, but it always starts with people that are in managerial positions (ES);
- e. the problem with people working at home is that they must be very serious, disciplined, organized and diligent (not often the case in Spain);
- f. leaders and managers must organize and assign work to their staff in an effective way (ES);
- g. governments (national, regional and local) and collectives (professional bodies) should play a more significant role than individual institutions or businesses (NZ);
- h. government used the pandemic to act punitively against universities (AUS);
- i. rather than having synergies or connections developing between institutions, it's every institution for themselves but also every person for themselves (AUS);
- j. teaching is a hot seat and we are there to make a difference but we need management support and resources (DK);
- k. EdTech business was huge before COVID, but it has now claimed to be bigger than FinTech. On the Seek job site, if you're looking for a job to be a project manager, for example, alongside the jobs being advertised are the courses that you can do. This is the growth of the private sector and a much deeper integration with online education (AUS);
- l. all Canadian universities have committed to Digital and micro-credentialing. Digital and their business is issuing Digital Badges and Micro-Credentials, and every Australian and New Zealand University uses the Digital platform. The business model here is a private-public partnership.
- m. in Australia, politicians have very little power, they just fund the universities. The universities don't care about politicians at all. They have their own decision structures, for example, in our university they decided to make redundant 493 people last year because of the pandemic (UNSW/AUS);
- n. the universities really led the digital transformation, the management boards really saw the financial situation and decided to move to online learning (AUS);
- o. formal tertiary vocational providers and the government agencies, particularly the Tertiary Education Commission, play a significant role in influencing future directions in digital transformation (NZ);
- p. there was little pressure from politicians or even higher management within the university. Mostly it has been about lecturers wanting to provide the best possible experience for students (NL);

- q. I don't think there has been a lot of change, institutions just reacted to events, and they are not interested in changing course for now (UK).

Q10. *Post-pandemic changes* (future impact in HE). Among Higher Education institutions potential changes can be identified primarily in two domains. One dealing with innovation policy, and how to support higher education institutions and universities. And the other, connected with this one, is how to advance the digital transition of higher education. But there are many uncertainties.

- a. I'm not sure traditional learning will change significantly (PT);
- b. some of the habits will stay on to some extent, like more use of the internet for pedagogical purposes (UK);
- c. there is the danger that online teaching across the UK is set in a very cheap format with the possibility that it becomes basically outsourced and online (UK);
- d. parents and students have realized the importance of teachers and pedagogy in the new models (ES);
- e. the social interaction in class is important and could be integrated with online learning (ES);
- f. online teaching effectiveness will depend on the kind of academic subject;
- g. the blended learning models and the habit of connecting via videoconferencing applications are here to stay;
- h. the students are getting a wrong impression of what online learning could really be, for instance, YouTube video delivery of poor content in a very cheap way;
- i. distance education institutions should really play a lead role with the other universities, but this has not happened during the pandemic (UNED/ES);
- j. it would be wise to think of a pandemic-ready future rather than a post-pandemic future (NZ);
- k. technology solutions present the opportunity to switch from alternate modes of learning at short notice where learning materials have been properly designed;
- l. social learning is a priority and the ability to meet face-to-face remains important;
- m. a lot of students and a lot of teachers will go back to what we did before COVID-19, because we are craving for human relations and not screen relations (DK);
- n. personal interactions build trust, that is more easily sustained than created in virtual spaces, so campuses are more likely to become 'learning villages' rather than collections of classrooms and lecture theatres (NZ);
- o. people have become even more focussed directly on the problems that are presented to themselves rather than being exploratory (AUS);
- p. in Australia, universities will be looking at the online environment as a business opportunity;
- q. in the long run I think people will start implementing some of the best experiences that we have had with blended learning, for instance, developing programs that are 1/3 online, 1/3 self-paced, 1/3 physical presence (DK);
- r. the future it's going to be different for each institution, according to its kind of leadership and its institutional culture;
- s. there could be a backlash against online models because a lot of online teaching has been done very badly;

- t. most students expect to have face-to-face teaching back, they are very conservative despite being digital minded (AUS);
- u. some aspects of the of the pandemic we'll bring changes, for example, working from home is now quite accepted in our universities (AUS);
- v. the experience of coming up with more alternative and shorter videos, within a mix of asynchronous learning, and flipping the classroom, are opportunities not to be missed in the future (AUS);
- w. in Australia, a university is a business. So, the university has shops as well as restaurants; they have pharmacies, they've got banks, they even rent student accommodation. So, they need the students on campus to make it viable.
- x. In the short run we really need "on campus" time, but I think we will try to offer more of our activities in a hybrid form. We've learned that some online interaction works really well, for example, a Q&A online session;
- y. We're going to be back to where we were, all the talk about this as a new dawn, a reinvention, a reimagination of education, that's just not true from the start. A few little things will change. So, we probably will record our lectures in the future. But we will get back to what it was, we'll still be going into a building together, we'll still be doing lectures together, we'll still be doing seminars, and all that stuff will come back (UK);
- z. The blended learning or hybrid learning will become part of university teaching and every university will offer distance courses. In the UK we have UCAS, which is the organization students use to find out where the courses are. But that's not exactly a paradigm change (UK).