Transcript

Series two, episode one: Digital transformation in higher education: past and present

Darelle van Greunen:

In our educational institutions, we've had to bring about change almost overnight.

Natasha Lokhun:

The COVID-19 pandemic has had an unprecedented impact on higher education around the world over the past year. As institutions were forced to close their doors, learning and teaching moved online. Staff and students had to adapt to using technology at a quicker rate than ever before.

Tshilidzi Marwala:

Many of my staff are now telling me that this online teaching seems to be much more taxing than in-person teaching.

Natasha Lokhun:

But for many institutions, learning and teaching online is not new.

Martin Weller:

During the pandemic and this kind of shift to online, what they call the online pivot, there was people acting as if online learning had just been invented. And there was lots of us sort of over on the sidelines going well, we've been doing this for a good 20 years now.

Natasha Lokhun:

Across this series, I'll be exploring how higher education is changing in response to the digital revolution. What can universities do to influence how technology is used and how can technology be used to influence the design and delivery of higher education? I'm Natasha Lokhun. Welcome to The Internationalist podcast from the Association of Commonwealth Universities.

In this episode, I'll be exploring some of the benefits and challenges that higher education will face in our digital future. My guests are Professor Tshilidzi Marwala, Vice-Chancellor of the University of Johannesburg in South Africa and Professor Martin Weller, professor of educational technology at the Open University in the UK. But first of all, we'll hear from Professor Darelle van Greunen, who leads the research engagement and innovation group at Nelson Mandela University in Port Elizabeth in South Africa. We asked Professor Van Greunen to sum up the digital developments she feels have made most impact in recent years.

Darelle van Greunen:

In our educational institutions, we've had to bring about change almost overnight with our teaching methods, with the way in which we equipped our classrooms and how we go about interacting with one another. Of course, we know in countries like South Africa and other African countries, the gap between rich and poor often manifests as a digital divide. However, technology had to be made available to those who could not afford it to ensure that we provide equal opportunities for all.

Technologies such as virtual reality and augmented reality has now opened up new and exciting possibilities to students and learners who may not have had access to this before. We now have robotics, advanced materials, 3D printing, quantum computing, blockchain, 5G, and all sorts of technologies that is no longer foreign words to the education fraternity on the African continent. I think it's safe to say that the fourth industrial revolution is now with us and that we have all had to adapt and can attest to the fact that our learning experiences, and the way in which we are offering these learning experiences, has changed forever through the use of these new technologies. There is no going back now.

Natasha Lokhun:

So there's no doubt in Professor Van Gruenen's mind that the use of technology in higher education is here to stay. I asked Professor Tshilidzi Marwala, vice chancellor of the University of Johannesburg, if he felt the same.

Tshilidzi Marwala:

There are two aspects of this answer. The first one is that some things have changed forever. I think some form of online learning is part of us. Some part of virtualization is part of us. But there are other parts that we have to go back to. I think physical contact we have to go back to. Maybe it will be different because we have to do social distancing. We should have classrooms that are much, much smaller than they were before the pandemic. So the answer is both. Some will change, some won't change.

Natasha Lokhun:

And you mentioned social distancing there. What do you think from your perspective has been the most challenging aspects of dealing with COVID in this context?

Tshilidzi Marwala:

Well, I suppose human contact is very, very important. Human beings are social animals. The digital social communities are not just the same thing. And certainly we have many, many students who come from rural areas. So when they were at their homes, connectivity was not as good as if they were in urban areas. We had to give all our students data, which was a new line item on our budget so that they can be able to access online materials. I think when it comes to tests, it was not smooth, especially for subjects such as mathematics, lab-based subjects, quite difficult for us to be able to execute when our students are scattered all over the country.

Natasha Lokhun:

How do you think the pandemic has exacerbated or highlighted those existing challenges? Was there a kind of differential approach beforehand or has the pandemic really kind of highlighted the divide I guess in that sense?

Tshilidzi Marwala:

Absolutely. The pandemic has highlighted the digital divide. The digital divide means access to data. It means access to good broadband connectivity and that is not uniform across the board. It meant access to devices. So we had to go and procure devices and send them throughout all our country so that our students can be able to connect to the internet, even though some of the connection would have been slow because of the connectivity issues.

Natasha Lokhun:

As much as those challenges have been present, and as you say your university as an example has come up with solutions to overcome them, thinking about that as a very temporary crisis situation, you mentioned the idea of smaller classrooms, the use of technology in the classroom if there is a physical classroom, then how do you think that change is going to happen? We've had this switch almost overnight. Is it a longer-term process to really bring about that change, that transformation?

Tshilidzi Marwala:

No, I think that transformation is going to be happening for quite a long time. The reason for that is because one thing that I really realized was that the technology for remote learning is less than perfect. I mean, I think going into the future, you are going to see much more virtual reality into our classrooms. We were not doing any of the virtual reality in our teaching. You're going to see more holograms.

Natasha Lokhun:

What do you think this means for teaching staff, for lecturers, for those who are having to deliver this content? What about the skills and the support that they need?

Tshilidzi Marwala:

No, absolutely. What it basically means, it means we need to re-skill the academic staff that are already with us and we need to look at the whole training of academics. One of my biggest criticism of higher education is that we never really teach our professors how to teach. Now with all these developments and the complexities around this development, it actually makes it more of a necessity that we must have structured programs to re-skill and skill our academics so that they can be able to handle this new context in which they are supposed to be able to deliver to our students. From now onwards, any university that is not thinking digitally is certainly going to be left behind. We have to reinvent ourselves many, many times as technology evolves.

Natasha Lokhun:

And I suppose that really speaks to the idea of the fourth industrial revolution?

Tshilidzi Marwala:

Well, the fourth industrial revolution is the era where you mentioned technologies are actually converging, which basically means almost everything that we do, we employ technology. And at the same time, technology is becoming intelligent. And in some tasks, I have to use the word tasks quite carefully here, technology is able to do things much better than human beings. So that is what the fourth industrial revolution is all about. Now, given the fact that many of the tasks in our workplaces, in our homes, are going to be done with the aid of machines. Now, me as an educator, I have to ask myself, how do I have to teach? What do I have to change in my curriculum so that my students are actually going to be adapted to that era?

And there are a number of initiatives that we have introduced here at the University of Johannesburg. One of it is that we have now made a course on artificial intelligence composited for all our students. Now, I'm not talking about an artificial intelligence course that is similar to what you would see in a computer science. This is a general course which just talks about the whole process of this technology. What it is? How is it changing all aspects of our lives? What are some of the ethical issues and how do we prepare for it? So it is clear that given all this development, our curriculum has to change so that our graduates are adapted to these changes.

Natasha Lokhun:

I guess, beyond higher education needing to prepare itself for the fourth industrial revolution, I suppose in reaction to that and in order to help students for that wider world, what opportunities are there for universities themselves for the sector in terms of actually embracing the fourth industrial revolution? And I suppose really, I mean, you said re-imagining themselves?

Tshilidzi Marwala:

Well, absolutely. I mean, the opportunities are quite huge. I think the universities will also have to reinvent themselves because much of this knowledge is being developed at many great universities. Now, what we ought to be asking ourselves is how do we make sure that the fourth industrial revolution and all these developments are part of our research agenda? How do we finance that? What are the problems that we ought to be solving? For here in South Africa, we very often find that many of these technological gadgets are not adapted to our phenotype, they

are not adapted to our languages and so on and so forth simply because they are not trained using our languages. And of course our languages are different. Bantu languages are different from Indo-European languages. The grammar is different. The texture and the sounds are different. How do we create algorithms that will be able to understand this?

So that is one aspect of it. And then obviously there's the aspect of curriculum that have already addressed this, an aspect of our engagement with industry. Which industries do we engage and what are the offerings that we are giving as a university? And ultimately, I think it is about saving society. What are the pressing needs of society and how can these technologies that are emerging right in front of our eyes useful in order to deal with the problems that society is facing? And in South Africa is the problem of unemployment, inequality and poverty.

Natasha Lokhun:

So professor Marwala raised many of the issues associated with the use of digital technology. Among them, the additional cost of providing data and devices to students. He also spoke about how lecturers are finding online teaching more taxing, and that the technology for delivering online learning is less than perfect. My next guest, professor Martin Weller, is professor of educational technology at the Open University in the UK. Professor Weller was part of the team that developed the Open University's first, fully online undergraduate course in 1999. I asked him if it was considered radical at the time.

Martin Weller:

It was considered radical. I remember a colleague of mine at the Open University had been there for many years said, well, you won't get 50 students on that. No one wants to study about that. And at the end, we got some 15,000 students on the course. So it was clear a lot of people did want to study about that. And it was quite important really in shifting the Open University to becoming much more of a digital university, because in some ways it really answered the question, can we teach this way effectively? And the answer was, yes. So yeah, so it is a bit of a surprise when during the pandemic and this kind of shift online, what they call the online pivot, there was people acting as if online learning had just been invented. And there was lots of us sort of over on the sidelines going well, we've been doing this for a good 20 years now, and it's not new and it often seemed like people were discovering things that have been known for quite some time. So that can be frustrating sometimes.

Natasha Lokhun:

Was there a perception that online learning was second rate and in your opinion has that persisted?

Martin Weller:

In some ways I think it's got worse. So yeah, there was a perception, not so much in the Open University that would be second rate, but just that there was concerns, and they were quite valid at the time, about whether enough students would have access to the internet. You have to remember, this was back in the time of dial up internet and those kinds of things. And whether students would have good enough computers and those kinds of things.

So there were some concerns around that, but in some ways I think that that perception you talk about, about online learning being second rate, I think I've seen come to the fore even more during the pandemic. And partly, I think that's a result of the online learning that a lot of students are receiving isn't very good, because it was an emergency pivot in many ways. And that's understandable. So within six weeks, suddenly lots of lectures had to put their courses online and the obvious thing to do then is just to convert your lectures to doing them online. And that's always a deficit model then. You're saying, is the online lecture as good as the face-to-face one? Well, probably not, but that's not the be-all and end-all of online learning. You can create online learning in many different ways and really sort of take advantage of the medium.

So I found myself pushing back against that kind of perception last year that the online lecture equals online learning because there are many different ways of doing online learning. Take

advantage of things for being asynchronous. A lot of our courses, students don't need to be at a certain place at a certain time. They can study at their own pace and organize their own study times. You can do group work that's kind of much more spread out and allows students to kind of find other resources and bring those in. And so you can really take advantage of what the internet offers, rather than just trying to replicate the face-to-face model online.

Natasha Lokhun:

So do you think there'll be a shift in these attitudes towards online learning as and when universities globally return to face-to-face teaching?

Martin Weller:

Yeah. I think we'll see a mixture of attitudes really and it's difficult to predict which, if any, will be prominent. And I think we might well see a backlash against it. I think there'll be an attitude that, well we tried online learning, students didn't like it as much, let's just go back to face to face. That's what we do best. And I think you might see some people be more radical and go, we're going to go completely online, allows us much more flexibility. But I think more likely you'll see a mixture, a blend.

Many students at campus universities, although they weren't that keen a lot of the online learning., it was also wrapped up with just the campus itself being closed and coffee bars being closed with all those sorts of things. But they did find some bits useful being able to access the lectures whenever they wanted, often the removal of exams and much more flexible options of assessment coming into play. So I think we'll begin to see a mixture of those kinds of things and now that students have experienced it, they'll want that kind of flexibility and adaptability built into their normal education.

And that presents a challenge really, because universities are then having to operate a kind of hybrid model of both being a face-to-face and a slightly distance education model as well. I think one of the things about universities and particularly senior management university is that they like building buildings. It's something kind of concrete they can point to. And that's often what we view of a university as, it's a kind of collection of buildings, a campus you go to. You'll go to many city centers, and there'll be all number of buildings, sort of springing up and the campus getting increasingly bigger and that's the kind of solid investment that when a new vice chancellor comes in, they nearly always want to put a new building up somewhere.

And I'm being slightly cynical, but that is a kind of a significant psychological shift I think to thinking that the kind of physical structure of a university is actually maybe not what the university is. The university is actually the staff and the students, and it's much more nebulous in a way I think. And we spend a lot of time often with these buildings trying to open them up and make them part of the community so people come in for open sessions, those kind of things. But actually you can achieve a lot of that engagement much more effectively online, whether it's through social media, open events and those kinds of things. So I think there's a very significant shift for universities about what their boundaries are and those boundaries and what they can control as well. And that control and boundary issue is a lot more blurred when you're online, for both for good and bad I think.

Natasha Lokhun:

There obviously have been challenges with online learning during this crisis period and professor Marwala referred to the fact that there are issues. Has the pandemic revealed fragilities in higher education systems?

Martin Weller:

I think so very much. I think in some ways it's a real wakeup call about areas of weakness within just the whole higher education system. So it was a pandemic this time, but it might well be something else that causes these things to happen later. Maybe it's climate change, maybe it's economic unrest, but things like bringing everyone together to one location, relying on

synchronous presentation through lectures, bringing everyone together for a single high-risk assessment such as an exam. Those are all kind of weak points in the overall system.

And when the pandemic hit, it turned out we didn't have very good alternatives to those in place and it kind of really revealed those fragilities. And if you look at something like conventional distance education, it's a much more robust model. I like to compare it to the design of the internet. It's designed to be distributed and open so anyone can access it, but also it's spread out so there's no one kind of center that's vulnerable to some kind of weakness. And I think when we have time to reflect, and I'm not sure we will get time to reflect, but if we do have time to reflect as a whole for the sector, then analyzing those weaknesses in the structural system will be really important I think for the next thing that comes along.

Natasha Lokhun:

That has been a view that online learning is an opportunity to reduce costs or to kind of maximize income. Do you think that's the case? Is that feasible?

Martin Weller:

In a word? No. I mean, that argument's been around since the late nineties when sort of e-learning had its kind of first flush of interest and it hardly ever works out. It's a shift in cost so you're not building buildings kind of expensive laboratories and those kind of things, but you often have to do a lot more in terms of preparing a course so that it can be studied at a distance, can be studied online.

At the Open University, we often take up to two years to write a course, which is done in presentation for eight years and that's the work of a multidisciplinary team doing that. And that's a lot different to a single academic just creating their lecture notes fairly quickly. So costs shift, but actually it's like all these things. It's like whenever the digital technology comes along, it rarely kind of ends up saving money in so many sectors, it kind of just reallocates those costs. And that kind of goes back to the point I made earlier about there's going to be a problem for many universities now that they're going to have to try and combine both of those different cost models within a kind of hybrid approach.

Natasha Lokhun:

Are universities ready to confront that reality do you think? Are there models out there that they can look at where this hybrid system works?

Martin Weller:

I think there are a number of ways to approach it. But many of those will provide challenges to how universities operate. So for example, one model might be to use more open educational resources, OER, in their teaching so you're not creating all the content yourself, but rather adapting open textbooks or content from elsewhere. Another one might be to work more collaboratively in small teams, but then have that content rolling out over a prolonged period. So I think it's going to require adaptations to what they do. And another model, which I think appeals to many universities but I'm not sure is the best route, is to effectively outsource the content production and just use a third-party content provider for them and they just concentrate on the teaching that goes around that. But I think that the problem with that is you're then not developing the skills in your staff to develop online courses effectively.

Natasha Lokhun:

What do you think the challenges are for higher education as technology becomes more widely used in education and society?

Martin Weller:

Well, there are a number of challenges. One is keeping up with it and knowing which technologies are worth investing in and are going to stick around because technologies come along and people make a big fuss about them and everyone rushes to them and then three years later they've

disappeared. An education is a much more kind of longer-term game. Universities have been around for hundreds of years, so we almost kind of flip and flop to the latest technology, but equally you don't want to stay stuck in the mud and not change. People often accuse higher education of being slow to change or having not changed at all. And that's simply not true. There has been a lot of innovation, a lot of change over the years, but it is quite conservative in how it changes and that's not necessarily a bad thing.

So I'll pick an example. So lots of people are making a lot of fuss about blockchain or the thing that underlines cryptocurrencies, those kind of things at the moment and saying we need to use it for higher education. But I've yet to be convinced that there's a good use case in higher education, but it seems like it's one of the things that people say "we should be using it because look, it's everywhere, isn't it exciting?" I've yet to be convinced that there's something really good there for us to use it. And if there is, fine. I hope to see that. But that seems one of those ones that's going to be driven a lot by hype. But equally there are kind of things and we mentioned virtual reality and augmented reality where you can certainly see very useful educational applications that would really enhance in certain disciplines what people do. So you need to make sure you're kind of getting that balance right.

And I think the second thing is technology often challenges what we do in higher education. So one of the things we saw, for example, in the online pivot was people went, oh, okay. We can't do face-to-face exams so we'll do online exams and they use a lot of these exam proctoring software things and there's been a lot of controversy about those exam proctoring things. They've been very invasive. They don't favor certain students. Students are saying they've been told if they feel sick, they have to be sick at their desk. Well, they can't leave their desks.

So they're very unethical, a lot of these platforms and there's a kind of big controversy around them. And I think what that demonstrates is that higher education often was more prepared to just perpetuate its current practice, even at the disadvantage of students, than to fundamentally think about, for example, how do we change assessment? Or an assessment shouldn't be an exam, it should maybe be something different. And so I think the technology itself there is making us rethink what we do in higher education and what are the fundamental things that we hold dear and how we change our practices?

Natasha Lokhun

It's not so much about the technology, but it's about the kind of practice and the policy and the drivers behind it. And then technology is the vehicle.

Martin Weller:

Yes. I think that's a good way to put it. And I think that what the pandemic has shown in some ways it's given a big boost to online learning. Suddenly everyone's had to engage with it. You can't say we don't know what it is and we don't do it. And in some ways it demonstrated the importance of educational technologies instructional designers within universities, who are often prior to that have been sort of quite root it's often they kind of get moved around to different departments and they're not listened to often. And I think it's kind of demonstrated their significance.

And there was a survey out recently saying that I think something like 60 odd percent of universities in the UK have changed their education technology policies as a result of the pandemic. So it's certainly brought that to the fore now and so that's, in some ways, an opportunity for those of us who work in online education, but it's also an opportunity for lots of, perhaps less scrupulous, companies to kind of say, we can come in and solve your problem for you, which is what a lot of vice chancellors might want.

So I think how we approach that over the next few years, how we deal with this kind of sudden change in attitude toward online learning, and trying to do that ethically and for the best purpose for students, will I think determine a lot for how higher education turns out.

Natasha Lokhun:

25 years ago, could you have envisaged how online teaching and learning would have developed in the current picture and what do you think the next 25 years might hold?

Martin Weller:

Looking back 25 years. So I expect this was my opportunity to do a plug, so I wrote a book called 25 years of ed tech, which went from '94 to 2018 so it doesn't cover the pandemic. In some ways you could predict it. So when I saw the web back in '94, '95, I immediately knew it would be useful for education, particularly for distance education. And I was surprised that lots of people were dismissing it even at the time when we were using dial up and it was slow to access, you could see this was going to be important for education. So in some ways I think that was predictable.

I think a lot of the broader impacts weren't predictable. I couldn't see them. So things like the importance of social media, for instance, in predicting elections or influencing lectures, all those kind of things and how much misinformation spreads around and those kind of things. And the fact that people's experience of life is often driven through Facebook and the things that are shared on Facebook. And I think those kinds of social impacts, certainly I didn't predict some and not many people did I don't think so. And those social impacts are also educational impacts of course, because we're operating in that area.

So I think that kind of demonstrates that it's always difficult to make predictions so I would be very cautious about predicting the next 25 years. But I think one thing that is clear is technology is now a pervasive, and by technology I'm really sort of meaning online technology, is now a pervasive part of everyone's lives. And so it's kind of beholden on higher education to help people deal with that. That doesn't necessarily mean teaching everyone to be a programmer, but it does mean helping them understand, for instance, how algorithms may affect their lives and bias in algorithms and how we as humans interact in a data society and issues around privacy and ethics, all those kind of things.

So I think there's a broader picture, no matter what you're studying about how technology is impacting that sector and what your role is within that and also what higher education's role is. I think higher education should be modeling lots of these things. That's why I mentioned ethics a lot, but I think higher education, for instance, we ethically source the coffee that we sell on our campuses. I think we should ethically source the technology we use in our education as well. So I think we have a role to play there in modeling good practice as well.

Natasha Lokhun:

So it's clear that this is not just about technology, platforms, data, devices, although these are important. This topic goes right to the heart of what universities are and what they do.

I'd like to thank Professor Van Greunen from Nelson Mandela University, Professor Marwala, from the University of Johannesburg and Professor Weller from the Open University.

The Association of Commonwealth Universities is committed to highlighting the issues that influence learning and teaching in our world.

In our next edition, we'll be looking at what skills will be required to make sure that technology enhanced learning in the future is a success. So please do subscribe to the series wherever you get your podcasts and like, comment and share the program.

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