Transcript

Series two, episode six: Beyond universities – technology and society

Speaker 1:

The pandemic has revealed remarkable, unfortunate inequities in all forms. Whether it's online learning, whether it's issues of race or mental health and wellbeing, we are not all in this together. And the other phrase that drives me crazy is, we look forward to returning to normal. Things weren't normal and effective before the pandemic, and there needs to be a major rethink as a result of what we've learned from the pandemic.

Speaker 2:

Our role as universities, is really to move very much into professional skills development. Being influenced by the change in technology, and the man machine interface.

Speaker 3:

We have now made a course on artificial intelligence compulsory for all our students.

Speaker 4:

And be prepared for this world, which none of us really knows what it's going to be like. But we certainly know it's not going to be what it was two years ago.

Natasha Lokhun:

Over the five previous episodes of this series of The Internationalist Podcast, we've explored the impact of digital technology on higher education. We've looked at the skills needed for the future, how technology can be used to bridge the digital divide, the future of blended learning, and what this all means for the campus. Most people agree that the pandemic has increased the speed at which we've adapted to using technology. Meetings via video conferencing are the norm, in fact, we've recorded this entire series remotely. And we've become more used to doing day-to-day things online. Companies, such as Amazon, have seen their profits soar during the past year. So is technology now essential for our daily lives?

Are we on the brink of a technological revolution that will change the way we live, work, and relate to one another? And how do we manage technology, before it begins to manage us? In this episode, the last in the series, we'll be looking beyond higher education, to the role of technology in wider society. And how universities can, and should influence this. I'm Natasha Lokhun. My guests are Dr. Aruna Tiwari, associate professor of computer science and engineering at the Indian Institute of Technology Indore, in India. And professor Ian Golding, professor of globalization and development at the University of Oxford, in the UK. I'd like to start by really reflecting, I suppose, on the impact of the pandemic, and asking you Ian, what has changed in the past year? Is it technology? Or is it actually people and our perceptions of that technology?

Professor Ian Golding:

I think it's mainly people, and how we use technology. There has been some technological improvements, and not least the ones that matter most, like in the development of vaccines, our genomic sequencing of the pandemic. That would've not been possible previously, at the speed and in the way it's been done. Of course, the big issue now, is ensuring that everyone on the planet benefits from it, not just the rich and people in rich countries. But it's been our ability to use these technologies for good and for bad. Good things like our connectivity. Having this remote podcast interview, is one of the aspects. And many of us are connecting with loved ones, people are staying in touch and we're carrying on and able to do our business and our home communication because of these technologies, particularly the digital technologies. At the same time, we've seen some very terrible aspects of these digital technologies.

The Trump campaign, for example. The anti-vax movements, the terrible racism that we're seeing in social media. These are all the other side of the same technologies that can be used for immense good, bringing progress, but also can create immense division and harm. And so this really, I think, highlights, and what the pandemic has shown is not only that it exacerbates and reveals inequalities, but it shows the importance of regulation of institutions of societies, and individuals choosing how we use these technologies. And of course, universities have a vital role to play in revealing and highlighting the benefits for inventing the technologies and making them, like the vaccines. One came out of Oxford university, my university. At the same time, we need to explore the dangers, and come up with suggestions regarding the policies that we need to manage them. Because technologies on their own, like the splitting of the atom, or like a knife which can be used to cut food or to kill someone, these are dual use weapons. And we need to make sure that we use them for our own good and the good of humanity.

Natasha Lokhun:

Aruna, would you agree? Is this very much about, I guess, what people in society do next, as it were? The choices we make about how to use technology.

Dr Aruna Tiwari:

I am agreeing with Professor Golding. I'm talking in context of the technological changes or the way that artificial intelligence, A.I, can be used as a technological thing during this pandemic. A.I always work on the collection of data. So if we look at the aspect of this vaccination, how these discoveries has been happened, regarding the drugs, or the vaccines, or the other kinds of things in healthcare scenario for fighting against this corona. It's because of huge data being collected in a very fast manner, and exchanged across the scientists and researchers.

And it was became possible to perform data analytics so fast, and these discoveries happened. So this is only because of digital revolution. I'm working in the area for plans, I'm sequencing since many years. So I know how to work with the genome sequences. Recently, we started working with the COVID-19 related disease diagnosis as well. The A.I researchers see it's similar one for any living organism. It may be a plant, or a human being. So if we talk about this, COVID-19, there are many variations of these virus, and many more keep on coming. So that combination of genome sequencing can be done in faster manner, because we are having A.I and data analytics approaches, which are the software level approaches and more faster computing. And we can make many predictions at the early stage.

Natasha Lokhun:

It's a great example of what people have been saying, and you said yourself for years, that A.I is potentially the solution to our pressing problems. But also there's threats, which is what Ian, you were saying as well. It's a dual, yes. What do you think, Aruna, is the role of digital technology in actually creating more inclusive societies?

Dr Aruna Tiwari:

If you look at the A.I, nowadays everyone is using this thing. So maybe person is not educated, not knowing how to work with the A.I devices. Still, that fellow is using, or dependent somehow the A.I technology. Some way, directly or indirectly. Because an uneducated person is also having mobile phones.

I want to take one more example. Before three months, I started collaborating with Indian Institute of Technology Delhi, under Rural Technology Action Group. This forum says that you identify the problem in villages, and you develop technologies for them. They are just enjoying their mobile, but behind that conversation, some A.I software was playing the role of data collection from satellite, and finding out the information that where the water level is good. So it's becoming possible, only because of that A.I software, we are developing. But obviously we need to train the common man for working with them. That's the real need. And government has to decide the policies. Once device is available, the drives, or campaigns are there. And there are many schemes which has already been initiated in Government Of India.

Natasha Lokhun:

And so Ian, it feels like the technology is there and it's ready to be used. In terms of inclusion through technology, it comes down to governments and how they choose to use it. Would you agree with that? The government's having to drive that agenda.

Professor Ian Golding:

Governments are important, but governments act on information they have, policies that are divided. And they reflect power relationships. The idea that government is somehow a neutral observer of this whole thing and act in the interests of everyone, I think, is a naive idea. Governments get lobbied by big technology companies. They reflect particular interests, and because the poor and the marginalized often don't have much political power, they don't often reflect their interests. It's not only governments that need to be active in this, citizens need to be aware of the consequences. Universities have a key role to play. And other organizations like civil society organizations, trade unions. So it requires a very rapid education. But on the inclusive question, my view is that A.I and the digital world can lead to more inclusive societies, but it also can lead to much more divided and unequal societies.

And examples of both are, for example, we urgently need the development of new crops with improved nutrition, to withstand the ravages of the climate emergency on water, on temperature, on others. Otherwise, many people will starve. And that's going to require genetic sequencing and a new green revolution, not least for Africa and places that haven't yet had a green revolution. We need financial inclusion, to allow people to get affordable finance. And we're seeing what, for example, M-PESA in Kenya, has done in this respect. People don't know that they're using A.I when they access finance or plant a new seed. At the same time, I'm very concerned about the loss of jobs that will come from A.I. I think this is not a fourth industrial revolution, which implies that it will lead to progress and people will be better off. These are not easy times, they're dramatic transformations.

And if robots, automation, digital services in the cloud take the jobs of everyone that works in call centers, that works in repetitive manufacturing, because these will be done by robots as is already happening in many countries. Where are the jobs going to come from? Where are, particularly the unskilled and repetitive jobs going to come from? Well, some will come from things that machines can't yet do, like care services, and other services. But a lot of the jobs that are the ladder to development, which is the manufacturing jobs, the services jobs, and call centers in back offices, like exist in Bangalore and many places in India, those are threatened by A.I enabled digital services in the cloud.

That's a choice we need to take as societies. Not necessarily to stop the technologies progressing, but to ensure that we have the jobs and the transition, and that these jobs are for the sorts of people that are losing their jobs, not just for high skilled people. So it's a very significant question

about whether it increases inclusion, or not. That is a societal choice, like everything with technology. What we invest in, what universities invest in, what the research is and how it's used, is a thing that people decide, not machines decide, or A.I services.

Natasha Lokhun:

And you mentioned the climate emergency. We've seen in the past year that video conferencing, for example, means a lot fewer flights, and therefore less pollution from aviation, as one example. Is a digital economy, a greener economy, in your opinion, Ian?

Professor Ian Golding:

Not necessarily, no. I mean, firstly digital and cloud services are now in many cities, the biggest users of energy. And in Amsterdam, something like a quarter of energy demand, is from computing and related services. The growth of things like Bitcoin and cryptocurrencies is rapidly escalating these, so anyone that uses Bitcoin and thinks they're doing good for the climate, needs to look at the data on this. It's devastating for the climate. Of course, a lot depends on where these computers and digital services are. And if they're driven off hydro, or if renewable energy drives them, then you could argue that digital services might be cleaner than physical connectivity. But even that, you need to look at the evidence. Because it might well be, manufacture of computers and of digital equipment, is itself extremely energy intensive. And of course, it leads to the mining of many minerals in some very unsatisfactory conditions. Batteries being the classic example, for electric vehicles.

But there are many others. Our mobile phones contain things which we need to hope, and which requires checking, is not done by child laborers in an artisanal mine somewhere. So computers and digital is not necessarily green. People were saying, well, one good thing about the pandemic is that, it has led to less flying, less driving, therefore carbon emissions have gone down. And trying to understand why in fact, they've gone up. They've now and hit a new record, is very important. But a part of the answer is computers and digital, and the growth of digital demand for energy.

Natasha Lokhun:

We've spoken a lot about the skills that people need, skills in the context of employment. And thinking about the role of automation, thinking about lifelong learning, which is obviously something that universities are engaged in. But also the skills that people need to engage with technology critically, and manipulate it as much as it manipulates them. What skills do people need to navigate the digital future?

Professor Ian Golding:

We need to understand the power of these new technologies, and we need to understand the possible consequences and make choices. The silos that people get into on social media, and get misinformation. The fake news. And this is all becoming more and more sophisticated. Someone could take my face and voice, and make me say something else on a deep fake. Very worrying. My own sense is that we need a more solid grounding in education systems, in ethics. We need to have more solid grounding in critical thinking. And of course the more autocratic governments are, the more they control the media. The more dangerous that is. Because we just have no optionality, if you're in an autocratic country where government controls what people hear and see. But even in democratic countries, we see an extraordinary convergence into very narrow paths of thinking, because of social media. So I think there's a real danger that we become uncritical thinkers, that our biases get reinforced.

And that instead of what was dreamed of by the creators of the internet and the worldwide web in the early '90s, being a great equalizing force of the spread of information, which would bring progress in the world, which is what we all hoped it would do. It leads to greater and greater division. And so, controlling advertising and the big business models by which social media

operate, they make 95% of their money from advertising. We think we're getting something for free, but actually we are the product that's being sold. Our preferences are what are being sold. And they're using us and they're not paying us for it. And worse than that, they not only use our data and our information, but they change our ways of thinking, without us even knowing about it. And that is, to me, the biggest issue that needs addressing.

That we need to ensure that the dream of a digital world, which is that we can share information, have more choice, and be able to progress in our lives through better decision-making, is realized. That's going to require not just governments, but governments are often the problem, not the solution here. This is going to require citizens understanding this potential, what's happening, and being active. So a wide range of skills, but mainly skills, I would say, around, look at what you're seeing on social media critically. And how do you do that? And how do you ensure that what you seeing is real? And how do you challenge it? And keep challenging it, and keep learning from it?

Natasha Lokhun:

You've mentioned that it should not just be the role of governments. Universities are obviously engaged in the sphere. There's business, there's the tech companies themselves, there's other employers, there's civil society, as you've mentioned. And then if you think about university specifically in their role, just thinking about some of the things we've discussed. Obviously there's the innovation piece and the research, and the technological development. There is providing evidence, I guess, for policy makers to help drive some of the regulation, for example. And then there is this really strong call for critical thinking. How does that work in practice? Who should universities be working with? And what should their role be?

Professor Ian Golding:

Well, I think in practice, it means that universities need to do their job, which is to teach people to learn critically. You need to understand the Silicon Valley idea that technology brings good and that Google does no evil, needs to be critically analysed. One needs to understand that technologies operate within a context, and we make that context. Through the rules, regulations, our norms and behaviours, what we do. And that's what universities need to do. And you can have university degrees, which focus specifically on that, but ordinary citizens around the world, engaging.

I think the university's in a way, too late. This needs to start at kindergarten. Then of course, what we do in the home is also important. Do we allow our children to look at their phones during a meal? Or do we want them to talk to us and discuss something? The number of times I go into homes or restaurants now and seeing people on their devices and even communicating across a table with each other through their devices, astounds me. And I'm pretty old, so I didn't grow up with this. But I believe that, that changing in behaviour is something we need to be very conscious of, and think consciously about at home, at universities, at school and in all dimensions.

Natasha Lokhun:

Final question. Aruna, I'll come to you first. In five years time, how will technology have changed our lives?

Professor Ian Golding:

So as professor Golding already mentioned, that everyone's sitting with their devices. If you go to the airport or if you go to malls or anywhere, in fact in home itself. If there are five persons in home, everyone is having their cell phone. And the kids and the teenagers, and obviously the person is in job, nowadays it is on mobile because everything is an online, and keeps on increasing. And the situation is in pandemic. It's must for kids. We started stopping them, don't play this mobile phone or game or this thing, but we can not say no now. Because they are used to say that every information is coming on the cell phone. Because education is also online. So we

cannot stop them to interact with this computer screen, this mobile phone, anyway. They are not away from this digital technology. It is stopping that external games, that is really must for physical fitness.

It's a harmful thing. So the last few years, you look at the education aspect as well. It is affecting the kids in this way, due to this gaming stuff. They are very much engaged in this. Apart from going to the grounds and playing something and developing their social aspects, and extending the ideas and learning more things in that way, that has stopped. In India as well, it is affecting so much to the younger ones. In fact, every man is realizing the problems which people are facing due to this digital devices, mainly with this cell phone.

Natasha Lokhun:

And Ian, in five years time, how will technology have changed our lives?

Dr Aruna Tiwari:

I hope it's saved us. I hope that everyone in the world is vaccinated, and that we've got through COVID-19. But not only got through COVID-19, but stopped future pandemics, which could be even worse than COVID-19. So that's my first hope. But also that we learn that through that process of creating a global distribution and understanding COVID-19, that is, which is the title of my new book, that it rescues us. Because it teaches us to cooperate, it teaches us to use technology for good, and we can stop future pandemics. But not only stop future pandemics, we can also use technologies to dramatically reduce our carbon emissions, to adapt and mitigate the impact of the climate emergency. And that also requires global distribution. In Paris in 2015, a hundred billion dollars was promised to developing countries, to ensure that they could get energy and get clean energy, a green growth. That hasn't happened.

So that is about money and technology spreading around the world, which will give the over a billion people that have no energy, clean energy. And allowing India and other countries to move from their terrible flows of carbon. One of the biggest coal producers, is India. And people in India using digital technology, are contributing greatly to that. But so too, in many countries like Germany, which also is a very big user of coal. So the technology is needed to deal with the emergency that's all around us, which is the climate emergency. And it's needed to also help grow literacy and democracy, human rights around the world. For individuals, empowerment. Not least to overcome discrimination against women. You can point a mobile phone at a situation. You can use it as many women all around the world, to report on being attacked in their homes, during lockdown.

It can be a great source of progress, but we need to address it. And there's going to have to, I believe, be a regulation of the big technology funds in order for that to happen in the digital space. There's a really interesting conversation going on in the U.S, at the present. And there's real hope that things could be happening. Including the taxation of digital technology firms, which is absolutely essential. Because they will basically say they're in the cloud, or in the Cayman Islands or somewhere. There are many other technologies as well, that needs harnessing. And there are many dangerous ones out there. The nuclear threat has not gone away. And the rising geo-political tensions with Russia, with China are extremely worrying in this regard. But so too is the proliferation of nuclear threats around the world. So these old threats, because they're new technology, doesn't mean we need to take the eye off the ball of old technological threats.

The greatest tragedy of technologies, is that many people, as Aruna mentioned, still live in a world unaffected, in some respects, from technology. People still use bullocks to plough their fields in India and many countries, in a pre-industrial revolution technology. There's enormous potential for existing technologies to be spread, to improve people's lives and productivity. But a key question, which we need to keep coming back to is, is it improving their lives? Or is it putting them out of jobs?

And that is going to be a big question, and cause some negative consequences for the future of cities, where most people live. Where rich people are escaping to the suburbs and to further out, and the ecosystems of cities are being challenged in dramatic new ways. So in five years time, I hope we have vibrant, healthier, cleaner cities because of technology. Not more devastated, emptying out of wealth cities, where poor people are left without jobs. So there's many things that we need to look to for technology, and the next five years are crucial. The decisions we take now, will affect the next 100 years. Whether it's on climate change, whether it's on pandemics, whether it's on the future of cities, whether it's on the future of work. So this is really a timely opportunity for you to have this podcast, and to help people to think more deeply about technologies and the choices we face.

Natasha Lokhun:

I'd like to thank my guests, Dr. Aruna Tiwari, associate professor of computer science and engineering at the Indian Institute of Technology Indore, in India. And professor Ian Golding, professor of globalization and development at the University of Oxford, in the UK. And I'd also like to thank all the other guests who have taken part in this series. The Internationalist is available to listen wherever you get your podcasts. So please do subscribe, like, comment and share. You can find us on Twitter, Facebook, Instagram, and LinkedIn. Just search for The Association of Commonwealth University. The Internationalist is presented by me, Natasha Lokhun, and produced by Gill Davies. It's an EarShot Strategies production, for The Association of Commonwealth University.