Education for Development: From Distance to Open Education

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Abstract: This paper sets out the ways in which technologies for learning have been at the heart of education for development for millennia, not as is sometimes thought only in the last 30 years of the digital revolution. Short case studies of the University of London External System and the Open University UK set out the development outcomes of these major distance education innovations. The context of widening access to Higher Education is acknowledged, in particular from the perspectives of student success and dropout. The major dimensions of open education enabled by digital affordances are elaborated, and their contribution to development acknowledged. Finally, the article suggests that the move to mass Higher Education systems in an overall majority of countries over the period of the UN Sustainable Development Goals will see the distinctions between online and campus-based modes diminished.

Keywords: development, education, distance education, open educational resources

Introduction

This paper tells the story of the term 'Open' in the field of education, in particular post-secondary and higher education, and aims to set out a trajectory that has moved from distance learning, to online learning, to open education, informed by the fields of mass communications, education for development, and the radical impact of the digital revolution. A core issue concerns the extent to which this trajectory represents continuity or discontinuity, or indeed both. We need first to reflect on the deployment of technology for learning, not as is sometimes thought a phenomenon of the 20th and 21st Centuries but one that goes back millennia and does not begin in Europe. The early records of Babylon, present-day Iraq, inscribed on clay tablets in about 2500 BCE contain stories, names of significant individuals and accounts of harvest amongst other things. This technology of writing on clay, then baking it for permanence, opened up learning on two dimensions. Firstly, the clay tablets provided data for the first time in known history which supplemented and in due course supplanted memory as the sole source of information. Secondly, the records provided a means for organised and systematic learning based on more than the oral tradition. This crucial contribution to development laid the basis in the Middle East and Europe at least for the development of science, humanities, agriculture, economics, etc., and for organised learning in support of development as we understand it today. Many working in the field of education presently, especially in richer countries, do not use the framework and terminology of development in which they could understand their work. But in many ways we stand on the shoulders of those early scribes and practitioners more than 4000 years ago.

The evolution from cuneiform script and Egyptian hieroglyphics to the alphabet in Europe made text as we know it today possible. The text was for thousands of years a handmade artefact, important for the practice of both private and public reading, as well as being portable, both essential elements in the opening up of education. Initially, as for example in the Great Library of Alexandria from the third century BCE, one copy of all the world's known texts was collected for reference on the spot. Later in the medieval period the texts were sometimes beautifully and richly illustrated, and they were certainly expensive, belonging principally to religious and royal houses. However, literacy remained an elite practice, and formal education in the few universities was conducted through face-to-face teaching in groups. It was not until the fifteenth century in Europe that printing began to change the parameters of learning and teaching in radical ways. While literacy remained an elite practice, and printed books luxury items, there was an expansion in the cities in particular outside the church and the court bureaucracy. Gutenberg's pioneering of the movable type printing press massified text production, providing access to knowledge on a far wider basis that hitherto, and accelerating economic, political and cultural development. Termed by Eisenstein as 'the preservative power of print', the text advanced the academic disciplines, their dissemination and that of private study in radical ways (Eisenstein 1996). We can imagine how this might have disrupted accepted notions of teaching, when students could read the thoughts of others independently of their teachers, in other words through more independent learning, escaping the worldview of their teachers in ways that may have been very unsettling, for the teachers at least.

We can see, therefore, in this brief account how technologies have been core to the nature and organisation of learning and teaching for millennia, and thus of education for development. While printed books, the library, and the lecture and seminar on campus were the natural landscape for learning and teaching for 500 years or so, they too in their time derived from revolutionary change, just as did the digital revolution starting in about 1990. As with digital resources over the last 25 years or so, they were far from universally available. It is into this landscape that we need to consider the first experience in the USA with shorthand courses provided by Caleb Phillips in 1728 in Boston through correspondence education, and very similar courses in London from 1840 by Isaac Pitman. These first courses in learning and teaching where learner and teacher were separated by distance were made possible by postal systems, at the time innovative clusters of technology. Pitman's courses in particular were significantly enabled by the use of the new railway which made possible a national postal system with regular and dependable collections and deliveries, expanding reach and speed in ways that remained largely stable until electronic communications nearly 150 years later. Pitman's courses also provided timely student feedback on their shorthand exercises, making them innovators in providing student feedback at a distance, a practise now universal in online and distance learning. The railway altered important elements of the human experience, making it possible to live and work in different places and to commute for daily work from country to town, as well as to take day trips or holidays. The speed of the letter in transit with the modern postal service also changed how human beings were able to relate to people living elsewhere in both business and family contexts. All this serves to demonstrate that while the digital revolution over the last 25 years or more has changed a wide range of sectors beyond recognition, it is not the first time that technology has changed the organisation of learning and teaching. It also makes clear how the framing of all experience in a local context began to be diminished. Distance and e-learning has played a significant role in the evolution of development in richer and poorer countries alike.

University of London External Programmes

It was from the nineteenth-century assemblage of technologies in the UK that the most important innovation of the period was made possible, the opening up of post-secondary education in the UK with the University of London External Studies system. From 1858 this new system made a radical intervention to provide educational opportunity: it separated place from study. In other words it published curriculum for its degrees, and set examination papers for those students who lived outside London in the same way as it did for students registered on campus. The students could stay where they lived and sit examinations in any approved examination centre near them. Students studied either with the support of a fast, developing network of tutorial colleges, or completely independently, a pattern that continues to this day. This extraordinary disaggregation of the learning and teaching process meant that geography was diminished as a barrier, as was exclusion from the elite universities in the UK on the grounds of social class or finance. Further, the University of London removed exclusion on the grounds of gender, being the first to admit women, in 1878. To complete the range of innovative practices the University of London admitted students on an international basis, and this served the far-flung cohorts of British citizens serving the British Empire in all parts of the world. This opening up of education was soon seized upon by those indigenous peoples in the Empire who had the English language and money to support themselves, a small number initially, but demonstrating nonetheless that university education could in principle be taken up by all. In the first decades after independence from the former British Empire, many of the new cohorts of political and professional leaders gained their university education from the University of London without ever having visited the UK. This system opened up university education across the barriers of geography, social class, gender and race, and is a remarkable story of education for development (Bell & Tight, 1993).

The period 1850-1950 in Europe saw the newspaper, telegram, telephone, radio, and television all becoming mainstream communications channels, diminishing distance and moving from marginal technologies for the elite to media for the majority. It is worth considering how the telephone in particular changed human experience, allowing synchronous conversation one to one, and subsequently one to many, irrespective of distance. It impacted enormously on both personal and organisational life and was operating internationally in Europe by the 1920s. Equally, newspapers, radio and television brought national and international perspectives on life, diminishing the local sense of identity or at least supplementing it very substantially (Briggs & Burke, 2010).

It was out of this range of technologies that the first open university was conceived in 1969, driven by explicit notions of the expansion of educational opportunity. The term 'open university' was invented by the social entrepreneur Michael, later Lord, Young. His work with the National Extension College in Cambridge, England saw experiments primarily in support of University of London External Students with tutorials, residential schools, correspondence teaching and course materials. Michael Young was an activist in the Labour Party, whose 1945 political programme he had drafted, and his idea was picked up by the Labour Prime Minister Harold Wilson who announced that a University of the Air would be established, to increase the knowledge and skills in the adult population necessary for economic growth, democratic citizenship and individual opportunity. This was in reaction to a very elite Higher Education system that still admitted no more than six percent of school leavers (Perry, 1976; Weinbren, 2015). By 1969, the year of the foundation of the new institution, following the

work of Jennie Lee, Minister of Education to whom the task was entrusted, the University of the Air had been retitled the Open University, and soon became an international phenomenon attracting interest all around the world. Its watchword soon became well known:

"Open as to people, places, methods and ideas"

It had to struggle nonetheless with scepticism if not downright hostility on a number of fronts. The first was familiar to those who had witnessed the struggle for universal primary and secondary education. The Open University in offering its places on a first-come, first-served basis at low cost made study in Higher Education a right of citizenship rather than being associated with social and/or intellectual privilege. This can be framed in the context of social, political and economic development. It came as a shock at least to some for whom that privilege, if extended to all, seemed to diminish their own privilege at the same time. Secondly, on the educational front, there was widespread scepticism about the use of the technologies of TV and radio, and the absence of a campus experience. The University of London External Programme had experienced this too, one hundred years or so earlier with the criticism that its graduates could not be of the same character as 'the Cambridge man', who rowed with his [sic] fellow students in the College boat (de Salvo, 2002). Open Universities have ever since had to suffer to a greater or lesser extent from the misleading confusion as to their quality being inferior simply because they were different from Oxbridge or other elite institutions. All too often the elision of social and educational elites is assumed to be a natural rather than a constructed phenomenon. There is no doubt, however, that the new Open University in the UK made radical history with regard to place, making the home the site of university study anywhere in the UK, and also changing the social expectations of who could study at university. The balance of women and men was more or less 50:50 from the beginning, which was also very different from most universities recruiting school leavers, where boys outnumbered girls still at that period (very different from 2018, the time of writing), and represented a significant contribution to gender and development.

The most challenging proposition for openness for the Open University UK was the notion of open access, that is to say that no entry qualifications were asked for. Advice and guidance were given to applicants, and those who had less than the normal minimum school leaving qualifications for university entry, 'A' levels for England, Wales, and Northern Ireland, and Highers for Scotland, were usually selected for advice and support pre-study. Nonetheless the decision was that of the intending student, not that of the university, thus making the OU unique in that the student chose the university, not the university the student. In the first 10 years or so the number of school teachers with Higher Education Diplomas rather than full Bachelors' degrees meant that as much as 40% of the student body was made up of this well qualified and highly motivated student subgroup. This was very positive for student success, and for the reputation of the OU in its first decade.

In addition to the extension of openness to place, we can see social class and gender being eroded as barriers to university study. Of great importance from the beginning was also the admission and support of students with a disability, and it can be fairly said that the OU pioneered study support for those with dimensions of disability that affected mobility, sight mental health and hearing.

Such notions of openness always had their critics, especially those who found it hard to see that if 'quality' was not controlled at entry it could not be an outcome of study. Indeed, the Open University UK initiated a debate about what quality in higher education is that has continued for 50 years, as

access to Higher Education has been extended by new cohorts of universities as well as new policies that have seen the growth of a mass rather than an elite Higher Education system. The Open University was unique, however, in not making the campus the core site of study, thus, breaking the stereotype of what it means to be at university. Just as critics earlier argued against universal secondary schooling in the 1930s in England, on the grounds that there was no point in educating working-class children for unskilled jobs, so there has been and, indeed, still is a stubborn stream of criticism that Higher Education should never have been reconstructed to move from some six percent of school leavers in the late 1960s to around 45% of school leavers in England proceeding to university today. These same issues – a mixture of perceived social eligibility and economic usefulness – are faced by many middle-income countries as they seek to fulfil their commitment to the UN Sustainable Development Goals by 2030.

From an Elite to a Mass Higher Education System

There are, however, many challenging factors in making the move from an elite to a mass Higher Education system. These do not make the move less necessary or important but cannot be ignored. First and foremost young people or adults who do not come from families with Higher Education experience often find the social and intellectual conventions of Higher Education more challenging than those who have had the privilege of growing up with these expectations at home, as well as going to schools where this is regarded as the norm. Such a collection of experience and skills can be termed cultural capital, and underpins more concrete study skills, the appropriate use of language, including English as an additional language, and above all, in important ways, confidence. However, despite the recognition of and attention paid to this range of issues over the last 50 or so years, there is no doubt that student success is achieved to a significantly varied extent both at institutional and intra-institutional levels. So, if we look at the most exclusive universities in the UK or indeed in most countries, those universities who define excellence by the difficulty of applicants gaining a place, student dropout or failure is limited to perhaps one per cent per year. By contrast, for those universities whose mission is to include rather than to exclude, and who, therefore, define excellence very differently, drop out and failure can be as high as 50% per year, as it is after the first year at the Open University UK. We have to remember what is being measured here, and it is not the same thing. While Oxford and Cambridge are, for example, taking as many as 50% of their incoming first-year students from private schools, with extraordinarily high achievements at school leaving at the age of 18 years old or so, and with selective screening as to their potential on top of that, with the Open University we have an open entry system, with more than one third of incoming first-year students having below the minimum normal qualifications for university, and one third having the minimum. It is legitimate to discuss whether this degree of openness to Higher Education is worthwhile, but not legitimate to criticize the outcomes of study for the Open University and some others whose mission is so very different.

The first point to be debated is whether quality of outcomes is more important than quality of input, if indeed such a setting of terms is accepted. It is certainly true that in terms of prior qualifications these are normally much higher in the elite universities than for the rest, and in particular for the unique avenue that an open-entry institution, such as the Open University, represents. But the Open University has pioneered the line of argument that outcomes are more important than inputs of this sort. The Open University as one university amongst many in the UK is part of the mainstream

quality assurance systems, including the external examiner system. There has never in fact been any serious criticism that the academic standards of the Open University are not as secure as those of the higher education sector as a whole. Indeed, the drift towards a far higher proportion of First-class and Upper Second-class degrees awarded in significant parts of the sector, including the elite, is not shared by the Open University to anything like the same extent.

So, the discussion has to move from where the academic standards are different, as it is nearly universally accepted that they are not, but whether it is worthwhile to offer opportunity to students who may not achieve success by as many as one in two of the entry cohort, and as few as 12% of any first year of entry achieving a Bachelor's degree on a part-time basis some six or so years later. The argument could proceed along two lines. Firstly, whether it is worthwhile to use public money to support higher education in such ways, and secondly, whether it is responsible to engage the morale, time and money of such students when success is far from guaranteed. That argument has shifted in nature over the 50 or so years of the Open University's life, moving from a time when tuition fees were very low and subsidised to a considerable extent by government through taxation, to the system introduced in 2010 in England, with 80% of students in the UK, where fees more than cover the costs and are born entirely by loans taken by the individual student. Indeed, the extraordinary rise in university financial reserves in universities across England suggests that fees paid to universities are not being spent by any means entirely on teaching and learning or other services to students.

The Open University UK, which has, during this same period, seen its students decline in numbers by as much as a third, and has also seen the near complete loss of its over-50-year-olds, has nonetheless retained its commitment to open entry. This is based on the social and political commitment of 50 years earlier, which saw university study as a social good that had for too long been denied the great majority, but which could be extended through open entry as a social good for all with the conviction that they were capable of benefiting from it. It is certainly the case that the new tuition fees policy in England has triggered discussion inside the OU UK as to whether open entry continues to be a responsible policy: primarily because individual students are making themselves liable to considerable tuition fee obligations and exiting by as many as one in two students with no credit. However, so deeply is the concept of open entry embedded in the Open University ethos that while significant attention has been paid to the guidance and information stage, together with pre-study courses for those with low prior qualifications, the principle of the student making the decision to study rather than the university making the decision to admit on the basis of perceived merit has not been seriously challenged. This significant reversal of the norm that a university chooses its students to be replaced by the student registering for study as a right, derived only from being an adult citizen, remains a radical commitment to social development through 'open' values in the world of higher education. The continuing decline of Open University UK student numbers in England, where fees are at the time of writing approximately £18,000 for a Bachelor's degree, raises the question as to whether equitable access to lifelong learning is possible outside a social democratic policy framework of low fees subsidised by taxation. The neo-liberal philosophy of 'if you want it, pay for it' appears to offer a mortal challenge.

Student Success and Drop-out

Having said all that, the issue of student success, dropout, retention and progression has necessarily and naturally had attention paid to it from the beginning, and a literature search will find many

articles, conference papers and book chapters on the subject over the last half century. While the focus of this paper is on open, distance and e-learning, as other campus-based universities have increased the access and widening participation strategies over the last 30 or so years, and included part-time modes alongside full time, the issue has been raised across the whole sector. There are a number of obvious points to make. Firstly, the more risk an institution takes with opening access the greater the impact on outcomes in terms of student success. So, lower prior educational achievement makes retention and progression more vulnerable. Secondly, learners on part-time and distance modes are more vulnerable than full-time students. They have to manage the conflicts for time and energy that family and the workplace demand alongside study. Since, by definition, these students are not taking their educational opportunity at 18 years old as regular school leavers the majority, though not all, will have lower prior educational achievement than the full-time cohorts of school leavers, or will have dropped out of HIgher Education for one reason or another and return later in life. Lastly, prior educational achievement combined with conflicts with time and energy all combine with social class and ethnicity, with students coming from lower socio-economic cohorts lacking the cultural capital and confidence that comes with students from families whose parents had Higher Education as part of their background. Street (2010) well summarises the major factors in student drop-out from online programmes as: time pressure for part-time students; the skills of self-management; the support of family, who are losing time the student has hitherto dedicated to its members; logistics and support from the institution, provided in timely and high quality ways that actively intervene to support the learner in her or his progress; and curriculum relevance, where the course of study including its assessment strategies provide a compelling and engaging experience for the learner.

A report on Student Success from the International Council for Open and Distance Education summarises a framework for optimising student success in open, distance and online programmes with an eight-point agenda (Tait, 2015). It is as relevant to campus-based institutions as to distance and online programmes of study and represents a contribution to the management practice for education for development for inclusion.

1. Learning design as a framework: by this is meant that the fragmented approach of pre-digital distance education where student support and curriculum design were separated, and had few links is replaced by a total view of a course or module. There are a range of programmatic approaches to Learning Design that can be easily adopted and adapted. The core principle, however, is to build a holistic and integrated approach where the boundaries of a range of professional disciplines are lowered and their working methods coordinated in particular by the affordances of digital technologies.

2. Pre-study information, advice, guidance and admission: the phase 'learner support before study' has been long recognised as a crucial contributor to learner success. There are challenging relationships with marketing and sales, and the extent to which demand is illegitimately created on the basis of over-promising student outcomes especially with regard to career and earning potential. While understanding who represent potential market sectors in a society is essential, the values and ethics of the admission process in a responsible educational institution are not those of commercial sales, where in principle at least the customer is regarded as having enough knowledge to manage the decision to study as an equal. While the potential student must be the decision maker, as in the health sector she or he must be transparently supported by experts, not regarded as a primary

source of income for the advisor. An ethical process must allow for a decision not to study to be a good outcome if it seems the right one. So, in summary, student success will be optimally supported where the admission process and the activities of advice and guidance that support it are framed in an educational context of values and practice, not in a context of sales. They are learner centred not commercially driven, and represent the value-laden character of education for development rather than the profit motive of commerce. The major recent scandals of online-for-profit colleges in the USA and elsewhere, who chose to overlook this distinction, are the inheritors of a long tradition of profit-focused rather than learner-centred correspondence and distance education colleges, and their practices are as damaging to the field of online and open education as to the individuals who are exploited.

3. Curriculum or programme for student success: the quality of curriculum is crucial to learner success. One of the most frequent causes of failure given by students is that the course 'did not seem to be what I thought it would be and did not interest me'. While the term curriculum has been discussed in school level education for decades it has only been in the last 25 years or so that what is taught in universities has been conceived in a framework of curriculum theory: that is, to acknowledge that how fields of knowledge and practice are defined and how paths organised through them represent choices that are open to contestation. In curriculum design the worlds collide of academics, adult learners in all their heterogeneity, employers inasmuch as they are able to articulate what is needed by the world of work in the future, professional bodies where relevant, and big issues as promoted by government, NGOs, and the media, such as sustainability, gender equity, and health. Managing this range of conflicting demands as well as admitting learners as co-constructors of knowledge with a wealth of learning resources outside the university is a complex challenge. Managing it well is crucial to student success.

4. Assessment: in lockstep with curriculum design is the contribution that assessment can make to student success. It is still not universally the case that assessment is conceived as important to student learning as it is to the judgement of student performance in gaining knowledge and skills, and the award of qualification. Where learning outcomes are integral to curriculum design then it is easier to frame assessment as the rational response to supporting students to achieve those outcomes and to judge whether or not they have done so. This approach drives both continuous and final assessment in an integrated way, as well as formative and summative assessment, and overall makes an essential and central contribution to the opening up of educational opportunity.

5. Intervention at key points and in response to student need: central to the practice of student support is the long-established notion in distance learning contexts of intervention. This identifies the importance not only of waiting to hear from students but making contact both routinely at recognised points that create barriers to progress, such as the submission of the first assignment, and in response to signals that indicate a need for support, such as the failure to submit an assignment on time. Opening channels of communication in this way supports the opening up of pathways to success. The recent developments in collecting, analysing and using data that make up learning analytics support the collection at scale of the signals that trigger interventions, and in patterns much closer to real time than were available in the pre-digital distance education systems. In online systems the absence of a student's log in to a learning management system can trigger a response as to the student's progress or lack of it. However, significant concerns about the ethics of learning analytics have been raised, in

particular about data privacy and the use of learning analytics to police or effectively discipline learners (Slade & Prinsloo, 2013). While these legitimate concerns are still to be fully worked through in terms of the boundaries for intervention, the long-established practice of teachers observing their students' progress and seeking to support them when they seem to hesitate or falter is surely in its core a supportive and caring practice, of great importance in mass higher education systems that bring students in from outside the elites.

6. Personalised support: in related ways to the principle of intervention, it is supportive of students in distance and online systems that they feel recognized as individuals, despite the remoteness, size and complexity that such systems often represent in part or in full. It is to be noted that students' feelings are highlighted here, which are as important to opening up opportunity as the cognitive challenge of learning in a field of study, and the organisational challenges of time management, amongst other things. This, however, advanced the practices of automation, AI, and online quizzes and games, and human interaction delivered through tutors and study advisors remains a core framework of activity to assure the delivery of personalised support at a distance.

7. Information and logistical systems: in the contexts of Technology Supported Learning systems the management of effective information and logistics is crucial to student success. Educational logistics – the management of complex services for learners at scale in timely and efficient ways – represents a field of innovative practice that is not yet adequately recognised and respected in educational contexts. The quality of work done in this field can make enormous difference to opportunity being real, and to student success.

8. Managing for student success: the final dimension of an institutional strategy for student success lies in its recognition as a core institutional objective, from the senior team through the range of units and subunits. Its existence as a whole institutional objective should lead to regular review of what student success is, how it is being achieved, and to the elaboration of strategies for its improvement across a range of dimensions. Rather than lurching from one student retention crisis to another, the institution has to focus on the recognition of who its students are and how they need to be supported, and to create a systemic practice that continuously seeks improvement.

A practice that aims for student success therefore is a multidimensional and multi-professional one, not the responsibility of student support workers or tutors alone. While the opening up of education brings serious accountabilities for developing such practice, it is not going to remove in some magical way the challenges of including those who have been excluded in the past. The converse of student success, that is to say student dropout and failure, does not represent the inferior status of the university, nor of its students. It does not represent the inadequacy of distance and online modes of learning and teaching. It does, however, represent the risks and challenges of openness and inclusion. Pushing at the boundaries of social geography, social class, gender, ethnicity and disability in a spirit of openness is not going to produce the rates of student success that the leading and well-established research universities can demonstrate through their highly competitive admissions policies, that seek to diminish rather than take on the risk of widening participation. It is important in the world of competing narratives about excellence and quality in university education that those institutions committed to inclusion rather than exclusion advocate proudly for their mission and articulate their excellence in terms of added value for students starting from further back than those who proceed from backgrounds of privilege to the elite institutions, as is so often the case.

Opening up Higher Education as the Open Universities have done all around the world has made a huge contribution to education for development, and this movement can be situated in the context of resistance to the elitism that has gone before. It represents a political statement about the value and rights of all citizens rather than a few. The wealthy countries have over the last 50 years moved from an elite to mass higher education systems, and over the next 15 years the world's middle-income countries will do the same, framed by their commitment to the UN Sustainable Development Goals. The need for a wider range of part-time, distance and online modes of study as a complement to predominantly campus-based modes will be an essential component of such expansion, as it will not be possible let alone desirable to meet such ambitious plans for development solely through the expansion of existing campus or the building of new ones.

In order to deliver a strategy for student success the assumptions of the elite system will need to be challenged, in particular the need to support students who enter Higher Education without necessarily having the cultural capital that will make study natural and build confidence that they have the right to be present and are not 'imposters' in a world of privilege to which they do not belong. One of the strengths of distance and online programmes is that they must re-examine strategies for learning and teaching, rather than simply rolling forward in an unexamined way long-established practices.

Equally, in a mass higher education system the pressures on graduate employment, already acute in many poorer countries, will become even more exacerbated, and the need to re-examine curriculum to support one of the key outcomes, namely support of graduate livelihood, will be pressing. Curriculum development should in part at least be an outcome of the sociological examination of which social cohorts are looking for personal and professional advancement, and which occupations need graduate education for the first time at scale. Examples of education for development at the Open University UK over the last decade or more have included Early Years Studies, Sports Studies and Retail Management degrees, all of which seek to build on occupational engagement derived from employment sectors of considerable scale, rather than discipline-based study. The nature of quality in such expanded systems cannot be assumed but must be re-examined and energetically advocated for in the face of inevitable dismissal that 'these sorts of people' should not be in Higher Education.

Other Contemporary 'Opens'

The digital revolution has brought a range of innovations of conflicting, surprising and challenging nature. Firstly, we can say that education more broadly but higher education in particular has been fundamentally changed along two axes, namely resources and communications.

The development of the Internet has delivered an infinity of resources to the home, the workplace and to the mobile learner. It has, or better said, it should change the nature of pedagogy, to recognise that the learner can, and should, be encouraged to find resources for her or himself. It might be argued that the tradition of independent learning with the student in the library is little different. It is certainly true that there are of course continuities, including the need for pathways through learning to be teacher supported. But open access to so many resources, including virtual access to libraries, archives, journals and e-books, provides a qualitatively different potential for independent learning.

As well as resources the potential for communication through digital means has changed radically the possibilities for the development and management of relationships. There are many challenges here, and important critiques of the extent to which human relationships are being nourished or diminished by the remoteness and anonymity of digitally supported communication. However, despite such challenges the possibilities for opening up communication to teachers and to fellow students remotely and asynchronously, by text or by audio and video, are very great and are changing practice not only in online and distance systems but also on campus and in the more recent development of so-called blended systems, where elements of campus and online can be very effectively combined. The very substantial contemporary creep of Technology Supported Learning into campus-based programmes has also meant that the sharper distinctions between campus based and online are less and less to do with learning and teaching and more to do with student cohorts and life stages, where campus deals mostly with full-time, high-school leavers and distance, online and blended programmes provide opportunity for lifelong, part-time and adult learners.

Out of the two axes of resources and communications have developed a number of important trends in education for development. While the digital revolution has stimulated a huge amount of commercial activity based on commodification and created huge wealth for those early into the markets, such as Microsoft, Facebook, Blackboard etc., not to speak of for-profit online colleges, there has been a contrary anti-commodification movement as seen in Open Educational Resources and open source learning management systems.

Open Education

There are a range of other 'opens' that support the opening up of education, and that now accompany, and sometimes challenge, open learning, to use a phrase that covers distance, online and flexible learning. These include, firstly, Open Educational Resources (OERs), a movement now more than 15 years old that seeks to share digital learning resources, including textbooks and online courseware on a non-commercial basis. The foundation stone of the OER movement has been the extraordinary innovation in 2001 of the Creative Commons license. As well as a range of OER repositories, there is even a now well-established OER University that seeks to support low cost learning opportunity. Clearly OERs derive from one of the affordances of digitally held text, video, etc., namely, the ease in sharing and adapting them as compared with print. The OER movement, as it can be called is supported by major International Governmental Organisations, such as UNESCO and OECD, as a means of contributing to the challenge of expansion of scale and opportunity and lowering cost in particular in post-secondary education. The pioneering spade work has also been supported by major foundations and a range of academics, mostly, but not exclusively, from open universities around the world. There is evidence that costs for learners using OER textbooks have been reduced, for example, in British Columbia, but much less evidence that educational institutions are using externally produced OERs to lower cost, with exceptions such as Wawasan Open University, Malaysia. Of course, OERs cost money to produce, so they are free to other users, not free in the sense of being without cost. However, the economic basis of the concept lies first in reciprocal sharing, and secondly in supporting institutions in the 'South' by those of the 'North'. While the production of OERs has developed strongly, their adaptation and use is much slower to develop, due to a range of reasons

including the academic culture of producing your own curriculum (Weller, 2014). The sustainability of such a model, if in due course sharing does not deliver economies, must be questioned.

Perhaps more important in the field, however, are what are effectively open resources such as YouTube and iTunes. These provide free at the point of use a range of multimedia resources that can be integrated into learning resources and are increasingly used on campus as well as in online modes. They also support learner engagement in their use of video and audio and drive professional development for academics in the introduction of multimedia on and off campus. These resources also drive and support informal learning, which as a domain of learning is of course far larger than formal institutional programmes but is as yet little acknowledged by them. There are some significant challenges at this stage of development with this range of open resources for learning, firstly, in the dominance of English as a language, and, secondly, in the dominance of the knowledge and understanding of the Global North being promoted as universal. This cultural domination is in a process of change as other major language groups, such as Chinese and Spanish, develop their own resources, and poorer countries begin to participate, as they legitimately should, as producers rather than only consumers of knowledge produced elsewhere.

OERs are not the only domain where the open principle has developed to challenge dominant commercial and commoditizing models. The open access principles for academic publication have deeply concerned major publishers, who have seen an increasing number of journals move out of publishers' hands to be produced under the roof of an academic institution on a free-to-view basis. In most cases, this is managed by founding a new journal which academics have learned to trust, as against the model, which now seems an extraordinarily unequal transaction, where the taxpayer pays for the academic to produce research, she or he gives it free to a commercial journal, and then the taxpayer pays again for the university to pay a subscription to that journal. Many research funding bodies have joined this movement by insisting as a condition that published research is available on an open basis in repositories, and commercial journals have had to adjust their models to allow free access after a period, say, of one year. Books are increasingly published in open mode online as well as in hard copy for a commercial price. Thus, for students as well as academics access to academic resources from wherever you are with online access has opened up study and research in radical ways.

We should also not overlook open software, which in dating from 1998 or so, in fact, has the longest life of the range of open products and services identified here. Once again, we see a push back against the commercial model for software development to a model of sharing and adaptation on a cooperative basis. This has been particularly important in our field with the development of Learning Management Systems based on Moodle. The Open University UK took the strategic decision to use a Moodle platform for the LMS primarily on the grounds that it would be lower cost than a proprietary product, and not have the risk of being locked in by the vendor in ways that make exit very difficult. Moodle is based on cooperative development with other users and should allow solutions that are tailored by the users for their own needs, rather than have solutions which are developed generically by a commercial platform. It may also be true that the costs of adapting Moodle for the institution's own purposes are greater than were anticipated, but this has not impacted on the success of the Moodle model with more than a million users.

Thus, we see in these streams in open education a still struggling realisation that the ease of sharing resources made possible in the digital world provides a basis for resisting the dominant commercial models that have driven the digital revolution. Nowhere is this more true than with the phenomenon of MOOCs. The motivation included the progressive desire to provide learning opportunity at low or nil cost in the 'South' as well as in the 'North'; the wish to boost institutional profile and recruit students; to find a way to develop income streams; and to accelerate the use of multimedia and technology-supported pedagogies in on-campus programmes. Motivation has also, it must be admitted, included the wish not to miss the train, even if the destination is not clear. However, universities in producing and running MOOCs from the beginning lacked entirely and indeed still substantially lack a sustainable business model. The critique of these free, online, short courses has been severe, and has included in particular the inadequacy of pedagogy and poor student completion. Nonetheless the number of learners continues to rise, albeit at a slower rate, and in 2017 stood at some 78 million around the world, including many in middle income countries, on 9,500 courses created by more than 800 universities. However, almost all MOOCs have hitherto been produced in the global North. What is indisputable is the extraordinary level of demand for online learning at low or nil cost. The discussion about poor completion, which in general stands at around 7-12%, is challenged by the assertion that many learners join not in order to compete for credit, where it is even possible, but feel free to stop without the stigma of dropping out of a formal course. It is also true that, for example, in the University of London MOOCs, the top 10 MOOCs in terms of completion have rates of some 50%. There is increasing evidence that those academics who develop MOOCs with major platforms such as Coursera or FutureLearn develop an interest in Technology Supported Learning on campus, and in research into learning and teaching. While this is a secondary outcome, and may well be unintended, it is significant as a change agent in learning and teaching in Higher Education. The increasing inclusion of MOOCs as elements in formal, on-campus programmes also introduces learners to multimedia online learning, and to some of the skills for lifelong learning for personal or professional purposes.

Conclusion

In conclusion, we can observe that while the speed and reach of the digital revolution over the last 25 years or so has been extraordinary, and is far from over, there is also a continuity over millennia in the reorganisation of learning and teaching as a result of the introduction of technologies into education, There is also long continuity in the democratisation of educational opportunity, from the still to be achieved goals of universal primary schooling on a global basis to the construction of mass higher education systems in middle income countries over the next 15 years. However, there is arguably a discontinuity in the structures of education, as technology supported learning becomes universal and comprehensive at all levels from school through to university and college. While 25 years ago distance learning still claimed with some justice firstly to be at the forefront of using newer technologies in systems for learning and teaching, with the open universities in prime position around the world, and, secondly, unusual if not unique in having a serious interest in rethinking pedagogy at tertiary levels, this near monopoly of focus is no longer the case. The lives of university and college students on campus in many countries include engaging with learning and teaching through Learning Management Systems; access to learning resources through the institution's LMS; submission of assignments electronically; and chat forums with fellow students and teachers. Campus students are

learning off campus at home, in cafés and in bus stations through the *de facto* if not explicit affordances of mobile learning that digital networks support. While in many countries we still have a significant specialization of interest in terms of cohort, with most universities still catering primarily for full-time, high-school leavers, this is by no means as clear cut as it was when open universities were established some 50 years ago. Many campus-based universities have online programmes, and especially at the Masters level. Indeed, postgraduate study for professional purposes has broadened the social reach of online study to be much wider than the educationally disadvantaged who represented the majority at the undergraduate level. As ICT for learning and teaching becomes universally adopted the specialised niche occupied by open universities is increasingly vulnerable (Tait, 2018). Indeed, the mantle of innovation in the phenomenon of MOOCs is not worn by open universities, who did not lead that wave of change. The fast-developing adoption of OERs and the far wider range of learning resources available through the Web is as relevant for campus-based as online programmes. The new pedagogies under development to support learners through the discovery and evaluation of learning resources are equally universally relevant. So, the professional field is less likely in the future, and even now, to be organised across structures to do with the use of technologies, digital or otherwise, or be confidently divided into campus-based or distance online programmes to support learning, and will be more to do with the life stage — high-school leavers or part-time lifelong options, and purposes — personal, social and vocational/professional or some combination thereof. While the technologies of mass communication and the digital revolution will continue to drive the opening up of education, so, too, will the third stream, introduced at the head of this paper, namely education for development. We may conclude that while the sector known as distance and online learning, and the institutions dedicated to this mode, has played a real and valuable role in the period 1970-2020, there will not in the future be anything remarkable about learning online that retains this segment descriptor as valid. We will surely continue to have political debate about who should go to university and what for, and about who should bear the costs, all elements in the great discussion in development of how opportunity is understood as primarily an individual responsibility or one that must be understood as socially constructed and to which governments acting for the majority must pay attention.

Acknowledgement

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