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Distance Learning—Predictions and Possibilities

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Abstract: Education systems, educational institutions and educational professions, including those of distance learning, can often be inward-looking, backward-looking and self-referential, meaning that they are often fixated on their own concerns, values and processes. In many respects, this is necessary and valuable but the topic of challenges and future trends in distance learning is an opportunity to explore the place of distance learning in a wider world where cultures and ideologies clash, where education and employment are no longer stable and secure, where universities and colleges are under unprecedented pressures, where the technologies and trends of educational technology represent a crowded and chaotic space and where a critical examination of distance learning is necessary to underpin its methods and its mission. This paper addresses in essence three questions, firstly, is the distance learning community clear about the definition and purpose of its work, secondly, what are global political, economic and technological pressures on the institutions of higher education delivering distance learning, and thirdly, what do typical innovations and trends in educational technology signify for distance learning? These are linked questions and the answers constitute challenging predictions and possibilities. The nature of these questions means there are no simple answers only a more complete understanding of a fluid, partial and complex environment within which education, including distance learning, cannot operate in ignorance or isolation.

Keywords: purpose of distance learning; political; economic and technological environment of distance learning; innovations in educational technology relevant to distance learning

1. Outline

The paper starts by looking at how distance learning is various defined in order to determine whether it has or ever had a distinct and helpful meaning. The conclusion, namely that definitions are fluid and confused, provides a context for discussions in the remainder of the paper. The paper moves onto look at the global economic and technological context of distance learning, then the global higher education component of this context and finally the paper analyses initiative and ideas within educational technology in order to explore how distance learning must adapt and adopt alongside them.

2. Defining Distance Learning and Its Neighbours

Definitions are important, not merely the espoused definitions but also the enacted definitions, the definitions by denotation and by connotation, what distance learning means to academics but also what it means to managers, students, policy-makers and other stake-holders across the various continents, countries, regions and cities where it seems to take place [1]. A brief discussion of the relevant ones might identify and resolve some of the concepts and confusion around distance learning, its potentials and its possibilities, or perhaps not [2,3].

One simple definition might be implied by the binary contrast between campus education and distance learning, but similarities with online learning, e-learning and virtual learning now blur the issue, as does, in a different direction, overlap with community learning and adult learning.

The distinction between formal and informal learning is also significant [4–6]. Also, in the mix is officially promoted open learning [7] accessing or consuming OER [8] or learning objects [9] contrasted with the web-enabled heutagogy [10], accessing or creating free web2.0 resources, and the relationships of distance learning to, for example, behaviourism, social constructivism and connectivism, and the questions about how different learning delivery modalities map onto different pedagogies or the epistemologies of cultures [11].

We casually referred to campus education and distance learning. This seems a clear distinction, one happens on campus or within campus universities, the other does not. Many campus universities now however exploit digital technologies to reach larger distant markets, and reach out to students who may study entirely remotely and entirely online. So, campus universities can have significant proportions of distance learning students. Online learning, digital learning, e-learning and virtual learning are apparently synonymous and interchangeable and are merely the preferred delivery mechanism for most distance learning. They are however never the sole delivery mechanism for either campus universities or distance learning, hence the use of the rather vague term, blended learning, to denote that digital learning is combined in some unspecified proportions with one or more other modalities [12]. We shall see the consequences of this confusion when we look at the global picture.

The distinction between formal and informal learning is also significant, especially in the context of the other terms. Formal learning usually implies accreditation and qualification and thus implies assessment and grading. These are potentially problematic for distance learning provision, though hardly insurmountable as the UK Open University and countless other providers prove historically and now MOOCs demonstrate with digital technologies, which we mention later.

Community learning and adult learning [13] are also synonymous or nearly so, and often refer to face-to-face informal learning, sometimes growing up from within the community and sometimes supplied by a formal institution like a college or university. They are not generally distance learning but might nevertheless use online resources, given the bandwidth and the imagination. They have in some cases taken place without tutors or teachers and consequently merge with the heutagogy we describe shortly. Irrespective of technologies, heutagogy, where there is a possibility, either on-line or face-to-face, that students may be teaching each other, adds new dimensions to distance learning.

Elsewhere we have made the case that digital technologies demolish or reduce the distances that separate people and communities from educational opportunities, and thus represent a major delivery mechanism for distance learning; we have however also made the case [14] that these distances can also be socio-economic and cultural or cognitive and physiological. So, distance learning as an instrument of empowerment or enfranchisement should not be interpreted or defined in too narrow a fashion if it is to fulfil its changed potential. There is also the argument, perhaps slightly naïve, that mobile technologies demolish divide divides, which might be viewed as a different aspect of the distances between classes or communities in respect of their access and use of digital technologies. Mobile technologies do in fact complicate and reconfigure digital divides but these do represent another type of distance across which distance learning could or should travel, and again, not a simple geographical or geometric distance.

We have however furthermore made the case that these technologically enabled pedagogies impose learning on people and communities at a distance, however that distance is defined, and allow the providers and producers of learning to assert their cultural hegemony. Our inferred question here is whether distance learning only ever involves geographical or geometric distance and separation or whether it embraces socio-economic and cultural distances, and cognitive and physiological ones, and does hegemony work within the new spaces of distance learning.

These definitions and distinctions are, as we have implied, of course never neutral, academic and abstract; they all serve the interests of one group or another, and we have argued that digital technologies reinforce existing divisions and inequalities [15] so we must ask similar questions about distance learning.

What now is the essence of distance learning?

Digital technology does certainly create spaces, cyberspaces and phonespaces [16]—spaces that are populated by different communities and these communities are separate, separated and distant from each other. So, is distance learning conceived and defined across cyberspace and cyber-distance, as well as across geographical space and geographical distance a meaningful concept?

These are perhaps ways of asking, does distance learning have a place in the world of the future, a place amongst other ongoing and emerging educational trends, fashions and concepts and a place in a world of dramatic political, economic, social and ecological change? Starting with the global context and systematically working inwards and downwards provides us with a framework for analysing whether distance learning does indeed have a place. This does however first raise questions about the role and purpose of learning and education.

3. The Purpose of Distance Learning

Distance learning is education; the possible purposes of distance learning are drawn from those of education. These purposes are now troubled as never before [17]. One purpose of education is to service economies and put learners into employment, specifically the cash economies and paid employment. This has been widely accepted. It is however increasingly problematic. Not only has globalisation over the past two decades meant that employment is a fluid phenomenon as companies pursue changing markets, resources, raw materials and tax and tariff regimes but there is growing talk of the *hollowing out of the labour market* [18], meaning the ever-widening chasm between people who manage, create and decide and those who clean toilets and clear trash, and thus an increasing barrier to any social mobility that might have been facilitated by education. On the other hand, any talk of an education for unemployment, for meaningful lives outside the economy, is difficult politically in the public domain. Digital technologies are one of the causes of these trends over our lifetimes and on the near horizon artificial intelligence (AI) and the Internet of Things (IoT) will only accelerate these processes. These factors appear in our later discussion of educational technology trends. This purpose is clearly utilitarian, objective and quantifiable, but even if accepted as the main or sole purpose of education, it is problematic. There is an increasingly consumerist orientation to higher education, driven by the rhetoric of neo-liberalism and marketization, which responds to a call for *job-ready* graduates [19,20], coming from both employers and the debt-laden graduates but this purpose is potentially at odds with the *future-proof* graduates (and lifelong learners) depicted in the more utilitarian aspects of digital literacy [21,22]. Higher education institutions are under continued pressure to produce *job-ready* graduates [23–25] and this drives *soft skills* [26], digital literacy and problem-based learning *inter alia* into the curriculum, and some of these may be more challenging to deliver at a distance.

Outside the cash economies and paid employment, especially those of the developed global North, education and specifically distance learning may have a clearer utilitarian purpose, supporting livelihoods, in subsistence rural livelihoods or urban informal employment. This is less likely to be accredited, leading to a qualification, and more likely to be vocational, supporting crafts, for example the pilots and programmes supported by the Commonwealth of Learning (www.CoL.org). There are other, less utilitarian interpretations of the purpose of education and thus of distance learning but as we will see when we look at the pressures and trends within higher education globally, these are likely to be squeezed or at the very least, obliged to quantify and objectify their activities and their outcomes [27]. This has certainly been the case for British adult education over the past three decades [28]

4. The Global Environment of Distance Learning

Having briefly discussed the various possible purposes of education we can now discuss the pressures and trends, starting with those that make up the environment of the distance learning globally.

Technology, the first one, is seemingly the easier to discuss. Any simplistic analysis tells us that digital technology gets smoothly and inexorably better, small, faster and cheaper [29]. In the broad

sense, this does seem to be true, but any smooth curves and established paradigms have inevitably been disturbed by each new *game-changing* innovation, the iPhone being recent and obvious [30,31]. Both the general trends and the game-changers are however driven by the commercial imperatives of the makers and the vendors of digital technology. This historical trajectory that puts more and more technology in the hands of individual consumers is set to continue because it is a consequence of global competitive market forces, and so too, as a consequence, is the erosion of the institutional monopoly of digital technology and thus of institutional distance learning. This technology is not only devices and infrastructure but also software, systems and services, and is reflected not only in the shifting balance between say mobile phones and networked desktop computers but also a shifting balance between say web2.0 applications such as social media and dedicated educational systems such as the learning management system (LMS). These changes not only put more technological power in the hands of learners but also more agency and control. Looking backwards, there was a sea change when the balance of individual digital technology and institutional digital technology tipped away from the institutions but the consequences of this are still to be felt, and we currently live in a world of zombie institutions, dead but still moving, unaware that individuals with personal and social technologies have taken their role, their rationale and their place. These consequences, as and when they happen, will play out differently in different countries, cultures and classes. The general implication, if such an implication is possible, is that learners will expect more choice and control, more respect and more variety, as they import their online experiences and achievements into their distance learning.

The other major global pressure is the general global economic and political environment and its capacity to fund the continued growth of education, of distance learning and of digital technology within distance learning. Like technology itself, but perhaps less confidently, we should be able to predict continued growth. This is however threatened by periodic crises, such as those of precipitated by the sub-prime mortgage failures of 2008 [32]; currently also by a marked movement towards neo-liberalism across much of North America and Western Europe [33–35]; and by the gradual drift of power, resources and capital away from North America and Western Europe and towards variously the economies of the Gulf States, the global South and the Pacific Rim and the emerging economies of Russia, Brazil, India, China and Turkey [36] Whilst the connection with distance learning may be tenuous and indirect, the rise of these regions and countries does suggest challenges to the established pedagogies of North America and Western Europe that have historically informed distance learning globally and challenges to the authority, resources and disposition of the state and institutions to underwrite these. The disparity of reports from various countries and continents point to large disparities in progress and provision, as we shall see.

5. The Global Education Environment

Working within this technology and economics environment are the global distance learning providers, principally universities and colleges. In very general terms, higher education globally has been characterised as becoming more global, corporate, competitive and stratified [37,38]. One recent report [39] summarises the following dominant and intertwined themes in higher education, specifically in Southeast Asia, as:

- massification,
- privatization, and
- Internationalization

wholly understandable given our earlier observations, further intertwined by six sub-themes:

- research capacity,
- autonomy and corporatization,
- foreign branch campuses,
- sector diversification and differentiation,

- the academic profession, and
- the use of technology.

where sector diversification is "a shift from a preponderance of higher educational institutions being (or at least aspiring to be) research universities toward a cadre of short-cycle, less-expensive, less-selective, more vocationally oriented, and more hierarchically managed institutions, whose faculty are oriented to teaching rather than to research," where privatization is "part and parcel of the neo-liberalism ideology which is prevalent in many countries in the Asia Pacific region" and globally, the academic profession faces several issues, relating to academic freedom, governance of higher education institutions, faculty compensation, politics and civility, conflicts of interest, hiring and promotions, and faculty workload.

Other reports highlight similar themes. Those in international higher education [40] include:

- international student mobility flows in the next decade and the demographic and economic factors impacting on them;
- the emergence of new models of global higher education partnerships—includes teaching partnerships and provision of degrees off-shore;
- patterns in research output and its growing internationalisation;
- commercial research activities that higher education institutions in different countries engage in as a response to decreased investment in higher education across a growing number of countries.

A similar study from the University of Oxford International Strategy Office [41] noted that

- National governments increasingly drive internationalisation.
- National focus is on quality assurance
- Graduate employability takes centre stage
- Universities in the developing world increasingly assume a regional or global role.

Another report [42] contributes further themes, namely the continued expansion of education for all; countries linking international education strategies to trade and development; the distribution of national education funding moving towards private funding & student fees; technology, specifically geared towards education, transforming learning; the continued impact of English and the need for specific new skills—sense-making, social intelligence, novel and adaptive thinking, design mind-set, new media literacy, computational thinking, trans-disciplinarity, cross-cultural competency, cognitive load management and virtual collaboration, most of which in the current context are sufficiently self-explanatory.

One recent report, again looking at South Asia, [43] talks of explosive growth, accompanied by a rapid climb up the global rankings, characterised as *expand out*, constructing new universities, hiring new faculty members, and allowing and encouraging the entry of private higher education providers, alongside *expand up*, introducing graduate programmes to prepare future instructors. At the same time, to reduce student demand for access to public universities, governments have allowed and encouraged private higher education. The rankings pressure, driven by the need for funding and prestige, has pushed faculty to increase publication in high-impact international journals.

A feature of globalisation is that the dominance of English, perhaps US English rather than British English, as the language of instruction. Whilst the volume of resources, that is online content and communities, in English is clearly a pervasive factor, a very specific driver is global league tables. These are based on high-impact journal publication rates and high-impact journals are invariably in English even so universities in say Germany, Sweden or Holland, let alone Brazil, Kazakhstan or China, are forced to abandon their national languages or mother tongues and focus on English.

An earlier decade, as higher education was opened up to a larger and larger number of institutions and as student numbers has risen, had seen the increasing professionalization of teaching, perhaps in order to assert the status of those less research-active institutions and less research-active faculty [44] The staffing of distance learning may be at the margins of these changes and more vulnerable.

This did however stimulate the interest in pedagogic research alongside the more established subject research and helped feed into distance learning research, especially where it worked with higher education students, and with practising lecturers and was perceived as improving local learning outcomes and student satisfaction. Whilst the funding that under-wrote this may have eventually dried up and whilst most innovation failed to embed, the medium-term outcome was part of a generation of faculty with a passing familiarity with some aspects of distance learning techniques.

It is not easy to summarise the implications for distance learning of this account of the fragmentation of higher education, but it is certainly a far less stable, homogeneous, consistent and consensual environment, the more so for informal distance learning operating at the margins of institutional higher education.

In formal distance education, there is enormous potential for widening access to higher education and increasing the diversity of student population since online technologies provide opportunities to learn anywhere, anytime and from anyone [45]. New technologies facilitate greater collaboration, both with global partners and at a more local level. There is however a culture of conservatism within European higher education which needs to change along with a recognition that new models of provision such as open online courses bring specific challenges.

Universities from the global North are also establishing campuses around the world, commercial online trainers gaining degree-awarding powers, and metrics-driven teaching and research are all part of a more competitive, corporate and managerial ethos amongst the major players in higher education [46]. These affect the ethos of distance learning and the balance between formal and informal.

At a global level, as we have said, over recent years, this has been characterised, certainly in the developed world, by increased global competitiveness, increased corporatisation and greater diversity (or stratification) of the universities themselves and new and increased pressures on university faculty to reconceptualise their roles and reconsider their priorities. As one report says, "Continued downward pressure from government funding, constituents' need for ready access to education information and services, and increased competition from international institutions all play a role in how the higher education industry is being influenced by the marketplace" [47]. Technology has been co-opted to support these changes, as universities and colleges use online and distance learning approaches to compete in more distant markets, and technologies replace human pedagogic and administrative functions, amounting to the creeping industrialisation of the universities' and colleges' core business [48,49]. This was identified from the early days of modern distance learning [50].

The overall impact on distance learning is likely to slow, indirect, haphazard and undocumented but the reports all bear out the early observation about privatisation, massification and internationalisation. One consequence might however be to push research away from open-ended questions of purely pedagogic interest and towards questions with a direct operational impact on institution-level metrics and indicators such as recruitment, student satisfaction, degree classification, retention/progression and first-destination employment [51]. Retention has often been the Achilles' heel of distance learning [52]. Another consequence will be a greater diversity of modalities, genres and providers in distance learning, driven by competition and delivered by digital technology.

6. General Educational Technology Trends and Distance Learning

The success, survival or transformation of distance learning may depend on its capacity to align, appropriate or co-opt any of the other trends or technologies evolving in the educational technology spaces of practice and policy. Some of these we have already mentioned in trying to define where distance learning fits and is defined in relation to other pedagogies.

A recent and much respected UK report [53] highlights some specific developments on the near horizon. These include,

- Spaced learning, a specific regime to improve retention and understanding
- Learners making science, a pedagogy to develop a more scientific frame of mind amongst learners
- Open textbooks, exploiting technology and the 'open' movement to mix purpose-built texts

- Navigating post-truth, addressing challenges of conflicting perspectives and competing facts, and the recent phenomenon of 'fake news'
- Student led-analytics, the development of learning analytics to empower learners

So, part of the challenge to the distance learning community is the adoption and adaptation of these to distance learners. Another review, specifically looking at higher education in the Arab world [54] identifies the following emergent trends, perhaps lagging behind Europe, Asia Pacific and North America, as:

- Online learning tools
- Flipped learning
- MOOCs and online courses
- Learning Management Systems
- Education and Gamification
- Mixing and matching digital tools

The New Media Consortium, recently defunct, addressed similar issues with its Horizon Reports. The last report [55] identified the following Key Trends,

- Long-term: Culture of Innovation and Deeper Learning
- Medium-term: Measuring Learning [56] and the Redesign of Learning Spaces
- Short-term: Redesign of Blended Learning and Collaborative Learning

We will come back to some of these and discuss their relevant in more detail. They are however placed in a wider context of Challenges, namely

- Solvable
    - Digital Literacy, the skills, knowledge and attitudes to prosper and flourish in digital environments
    - Integration of Formal and Informal Learning, crossing contexts, carrying understanding and experience backwards and forwards
- Difficult
    - Achievement Gap, meaning gaps based on gender, ethnicity, location etc.
    - Advancing Digital Equity, increasing digital fairness in terms of access, attitudes
- Wicked
    - Managing Knowledge Obsolescence, meaning developing the cognitive and affective skills to assess, organise and discard knowledge
    - The Role of Education, for example in the face of conflicting cultural expectations and of digital technology impact on various aspects of labour market trends

Again, these also feature elsewhere in our discussion, albeit sometimes implicitly. Moving on to likely Important Developments, identified as

- Near Horizon
    - Adaptive Learning Technologies
    - Mobile Learning
- Medium Horizon
    - Internet of Things (IoT)

- Next Generation LMS

- Further Horizon
  - Artificial Intelligence
  - Natural User Interface

Again, we see the changing technological and pedagogical environment presenting the distance learning community with challenges and opportunities, and we see the impact of the wider educational themes and global technological and economic trends. It is a somewhat haphazard assortment of pedagogies and their technologies; it does however hint at the intersection of underlying educational trends, for example more personalised, active deeper learning, with the global economic and ideological pressures on education.

7. Specific Educational Technology Trends and Distance Learning

We conclude by looking at some specific trends in educational technology and their likely significance for distance learning.

The *flipped classroom* [57–60] was originally an American conception and a response to various practical and pedagogic problems and challenges (principally those of encouraging autonomous active learning, discussions about *bring-your-own-device* and increasing pressure on contact time) and a response to a specific infrastructure and technical environment (namely the widespread availability of cheap connectivity and personal, social and domestic digital technologies). Whilst an underpinning theory of the flipped classroom may have emerged, the idea was nevertheless originally nationally specific and culturally specific, and so are the documented experiences originally from a very specific setting, namely schools in America. The flipped classroom concept should not be interpreted merely as using technology to displace the consumption of content out of the classroom. In fact, the principles of the flipped classroom can be expressed as the following questions,

- How can educators optimise the face-to-face learning experience? What is it that students can only get face-to-face with lecturers?
- How can educators optimise the ways in which students can learn from each other face-to-face? What is it that students can only get face-to-face with each other?
- How can educators optimise the campus experience? What is it that students can only get by coming on campus?

And,

- How can digital technology support addressing these challenges? And what does digital technology do most effectively or uniquely?

We should consider the flipped classroom alongside discussion of *personal response systems* (*PRS*) and *Problem-based learning* (*PBL*). Whilst the first incarnation of PRS was delivered on dedicated devices, the so-called *clickers* or *zappers*, for example in economics [61] and many other disciplines—and thus an unsustainable expense—later incarnations use software or apps, such as *Socrative*, which run on learners' own devices. They essentially deliver the ability to make the lecture, already highly cost-effective, more interactive and flexible. PBL [62], with its focus on problem-solving, team-work and real-life problems makes learning more authentic and open-ended. These initiatives all potentially separate distance learning from a much clearer articulation of the best of face-to-face learning, namely flexibility, responsiveness and engagement, and distance learning educators must address the implicit critique. There are of course competing positions [63].

Content curation [64] sometimes called orchestration, is the concept of supporting learning with resources from wherever they are best, not defaulting automatically to the treadmill of in-house content creation. If content, and its IP, intellectual property, represent a perceived business asset within their

respective universities then curation is the basis for a very different business model. It is kindred to the open learning movement, driven by motivation that is part pedagogic, part ideological, part practical. To work effectively curation requires teachers (or the designers of learning experiences) to develop skills around the selection and organisation of resources. Higher education is however still largely committed to in-house resources. Skills and attitudes are the likely barrier to change even if it is perfectly reasonable to argue that in a few cases in a few institutions in-house content encapsulates unique new knowledge, unavailable anywhere external. There is however the opportunity for distance learning educators to see content curation as the mechanism for providing larger numbers of more diverse learners with rich resources in a scalable, systematic and quality assured manner.

The movement to exploit external content—that is, the curation of content—is aligned to the movement to exploit user-generated or learner-generated content [65]. Mobile technology often empowers a more broadly-based demographic of creators, and empowers richer and diverse content, derived from the environment and the context, wherever people could take their mobiles. It implicitly happens every time someone shares their ideas and images on social media (and similarly, curation happens every time someone uses social book-marking) but is only a fringe activity in higher education. It represents a powerful new direction for distance learning, with a more explicit element of critical and active learning, reinforcing the connection with the wider world that can play to the ethos of distance learning.

Digital literacy is the pervasive and comprehensive underpinning of all these various trends and formulations. In its broadest interpretation, digital literacy describes those skills, attitudes, access and competences necessary for individuals, and perhaps communities, to flourish in an increasingly digital world [66]. The genesis of digital literacy was higher education in western Europe with a clearly defined pressure to focus on e-learning, IT skills and employability and a less coherent lobby for the social, culture, expressive and creative aspects of being digital [67]. This should be of specific relevance to distance learners, as opposed to campus learners, because of the need to be more independent, resourceful and flexible; there is a tension between the distance learning technologies of the institutions and the universal technologies of distant learners out in societies, but there is also the opportunity to better align distance learning with learners' own digital lives.

A discussion of the MOOC should follow on logically from all the previous topics [68–71]. The idea of the MOOC was born out of experiences with large open distance learning courses in higher education that suggested a new pedagogy, where the numbers and connections would create a new learning paradigm. The story of the MOOC is however not straightforward. In its original formulation, it did indeed hark back to many of the issues just discussed. It grew out of ideas and experiences with large numbers of connected learners, termed *connectivism* [72]. As well as the documented Canadian experiments, there were smaller ones with a specifically free and mobile focus [73]. The idea of the MOOC became however co-opted by formal institutional perspectives and now has been transformed into a highly interactive rich media experience broadcast by universities on a small number of specialised and dedicated platforms [72].The early idealism of the *wisdom of the crowd* [69] has been replaced by a globally competitive and corporate ethos, understandably given our earlier remarks, but the MOOC in its different incarnations has much to offer distance learning. Our message is to recognise the place of the small, specific and local in the face of the large, general and global and for distance learning to provide opportunities and modalities all across spectrum of possibilities.

8. Concluding Remarks

This paper has attempted to put distance learning within the wider context of the global technological and economic trends and pressures and against the context of specific educational technology trends and initiatives. This has not been easy since these trends are characterised by fragmentation and diversification. The abstract conclusion is the need remain open, flexible and aware, to seek and expect change, connection, agency and authenticity. The nature of these wider contexts does however mean there are no simple conclusion, only a more complete understanding

of a fluid, partial and complex environment which education, including distance learning, cannot operate in ignorance or isolation. The practical conclusions must come from the providers, the funders, the managers and the trainers of distance learning, to think through this abstract conclusion to their individual programmes, institutions and responsibilities.

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References

1. Traxler, J. Mobile Learning: The Philosophical Challenges, Problems and Implications of Defining and Theorising. *S. Afr. J. Open Distance Learn. Pract.* **2017**, *39*. [CrossRef]
2. Moore, J.L.; Dickson-Deane, C.; Galyen, K. e-Learning, online learning, and distance learning environments: Are they the same? *Int. Higher Educ.* **2011**, *14*, 129–135. [CrossRef]
3. Valentine, D. Distance learning: Promises, problems, and possibilities. *Online J. Distance Learn. Adm.* **2002**, *5*, 1–11.
4. Folkestad, G. Formal and informal learning situations or practices vs. formal and informal ways of learning. *Br. J. Music Educ.* **2006**, *23*, 135–145. [CrossRef]
5. Malcolm, J.; Hodkinson, P.; Colley, H. The interrelationships between informal and formal learning. *J. Workplace Learn.* **2003**, *15*, 313–318. [CrossRef]
6. Wellington, J. Formal and informal learning in science: The role of the interactive science centres. *Phys. Educ.* **1990**, *25*, 247–252. [CrossRef]
7. Lewis, R. What is open learning? *Open Learn.* **1986**, *1*, 5–10. [CrossRef]
8. Olcott, D., Jr. OER perspectives: Emerging issues for universities. *Distance Educ.* **2012**, *33*, 283–290. [CrossRef]
9. McGreal, R. Learning objects: A practical definition. *Int. J. Instr. Technol. Distance Learn.* **2004**, *9*. Available online: http://www.itdl.org/Journal/Sep_04/article02.htm (accessed on 7 March 2017).
10. Blaschke, L.M. Heutagogy and lifelong learning: A review of heutagogical practice and self-determined learning. *Int. Rev. Res. Open Distrib. Learn.* **2012**, *13*, 56–71. [CrossRef]
11. Anderson, T.; Dron, J. Three generations of distance education pedagogy. *Int. Rev. Res. Open Distrib. Learn.* **2011**, *12*, 80–97. [CrossRef]
12. Graham, C.R. Blended learning systems. In *Handbook of Blended Learning: Global Perspectives, Local Designs*; Bonk, C.J., Graham, C.R., Eds.; Pfeiffer Publishing: San Francisco, CA, USA, 2006; pp. 3–21.
13. Merriam, S.B.; Cunningham, P.M. *Handbook of Adult and Continuing Education*; The Jossey-Bass Higher Education Series; Jossey-Bass Inc.: San Francisco, CA, USA, 1989.
14. Traxler, J. Distance education and mobile learning: Catching up, taking stock. *Distance Educ.* **2010**, *31*, 129–138. [CrossRef]
15. Traxler, J. Learning with Mobiles in Developing Countries-Technology, Language and Literacy. *Int. J. Mob. Blended Learn.* **2017**, *9*, 1–15. [CrossRef]
16. Townsend, A.M. Life in the real-time city: Mobile telephones and urban metabolism. *J. Urban Technol.* **2000**, *7*, 85–104. [CrossRef]
17. Goodson, I. All the lonely people: The struggle for private meaning and public purpose in education. *Crit. Stud. Educ.* **2007**, *48*, 131–148. [CrossRef]
18. McIntosh, S. *Hollowing Out and the Future of the Labour Market*; BIS Research Paper Number 134; Department for Business, Innovation and Skills: London, UK, 2013.
19. Moore, T.; Morton, J. The myth of job readiness? Written communication, employability, and the 'skills gap' in higher education. *Stud. Higher Educ.* **2017**, *42*, 591–609. [CrossRef]
20. University Alliance (nd) Job Ready: Universities, Employers and Students Creating Success, London, UK. Available online: https://www.unialliance.ac.uk/wp-content/uploads/2014/07/UA06_JOB_READY_web.pdf (accessed on 7 March 2017).
21. Connor, A.M.; Sosa, R.; Karmokar, S.; Marks, S.; Buxton, M.; Gribble, A.M.; Foottit, J. Exposing core competencies for future creative technologists. In *Creative Technologies for Multidisciplinary Applications*; IGI Global: Hershey, PA, USA, 2016; pp. 377–397.

22. Owen, S.; Hagel, P.; Lingham, B.; Tyson, D. Digital Literacy, Discourse: Deakin University Library Research and Practice, No. 3, Geelong, Deakin University Library, 2016. Available online: http://hdl.handle.net/10536/DRO/DU:30082926 (accessed on 7 March 2017).
23. Kavanagh, M.H.; Drennan, L. What skills and attributes does an accounting graduate need? Evidence from student perceptions and employer expectations. *Account. Financ.* **2008**, *48*, 279–300. [CrossRef]
24. Kivunja, C. Do you want your students to be job-ready with 21st century skills? Change pedagogies: A pedagogical paradigm shift from Vygotskyian social constructivism to critical thinking, problem solving and Siemens' digital connectivism. *Int. J. Higher Educ.* **2014**, *3*, 81–91. [CrossRef]
25. Wang, J.; Ayres, H.; Huyton, J. Job ready graduates: A tourism industry perspective. *J. Hosp. Tour. Manag.* **2009**, *16*, 62–72. [CrossRef]
26. Andrews, J.; Higson, H. Graduate employability, 'soft skills' versus 'hard' business knowledge: A European study. *Higher Educ. Eur.* **2008**, *33*, 411–422. [CrossRef]
27. Biesta, G. Good education in an age of measurement: On the need to reconnect with the question of purpose in education. Educational Assessment, Evaluation and Accountability. *J. Pers. Eval. Educ.* **2009**, *21*, 33–46.
28. Tuckett, A. The rise and fall of life-wide learning for adults in England. *Int. J. Lifelong Educ.* **2017**, *36*, 230–249. [CrossRef]
29. Kumar, S. Mobile communications: Global trends in the 21st century. *Int. J. Mob. Commun.* **2004**, *2*, 67–86. [CrossRef]
30. Furfie, B. Is the iPad a game changer? *Eng. Technol.* **2010**, *5*, 34–35. [CrossRef]
31. Wortham, J. *Apple's Game Changer, Downloading Now*; The New York Times: New York, NY, USA, 2009.
32. Demyanyk, Y.; Van Hemert, O. Understanding the subprime mortgage crisis. *Rev. Financ. Stud.* **2011**, *24*, 1848–1880. [CrossRef]
33. Hill, D.; Kumar, R. (Eds.) *Global Neoliberalism and Education and Its Consequences*; Routledge: Abingdon, UK, 2012.
34. Lakes, R.D.; Carter, P.A. Neoliberalism and education: An introduction. *Educ. Stud.* **2011**, *47*, 107–110. [CrossRef]
35. Olssen, M.; Peters, M.A. Neoliberalism, higher education and the knowledge economy: From the free market to knowledge capitalism. *J. Educ. Policy* **2005**, *20*, 313–345. [CrossRef]
36. Armijo, L.E. *The BRICs Countries (Brazil, Russia, India, and China) as Analytical Category: Mirage or Insight? Asian Perspective*; Lynne Rienner Publishers: Boulder, CO, USA, 2007; pp. 7–42.
37. Altbach, P.G.; Reisberg, L.; Rumbley, L.E. *Trends in Global Higher Education: Tracking an Academic Revolution*; UNESCO: Paris, France, 2009.
38. Vaira, M. Globalization and higher education organizational change: A framework for analysis. *Higher Educ.* **2004**, *48*, 483–510. [CrossRef]
39. Songkaeo, T.; Yeong, L.H. *Defining Higher Education Issues and Challenges in Southeast Asia/ASEAN within the International Context*; The HEAD Foundation: Buffalo, NY, USA, 2016.
40. British Counci. *The Shape of Things to Come: Higher Education Global Trends and Emerging Opportunities to 2020*; British Council: London, UK, 2012.
41. University of Oxford International Strategy Office. *International Trends in Higher Education 2016–17*; University of Oxford: Oxford, UK, 2017.
42. British Council. *10 Trends: Transformative Changes in Higher Education*; British Council: London, UK, 2017.
43. UNESCO Institute for Statistics. *Higher Education in Asia: Expanding Out, Expanding Up: The Rise of Graduate Education and University Research*; UNESCO Institute for Statistics: Montreal, QC, Canada, 2014.
44. Lueddeke, G.R. Professionalising teaching practice in higher education: A study of disciplinary variation and 'teaching-scholarship'. *Stud. Higher Educ.* **2003**, *28*, 213–228. [CrossRef]
45. High Level Group. *High Level Group on the Modernisation of Higher Education*; Report to the European Commission on New modes of learning and teaching in higher education; Publications Office of the European Union: Luxembourg, 2014.
46. Deem, R.; Mok, K.H.; Lucas, L. Transforming higher education in whose image? Exploring the concept of the 'world-class' university in Europe and Asia. *Higher Educ. Policy* **2008**, *21*, 83–97. [CrossRef]
47. Deloitte. *Higher Education is Evolving*; Deloitte LLP: Fredericton, NB, Canada, 2014.
48. Traxler, J.; Lally, V. The Crisis and the Response: After the Dust Had Settled. *Interact. Learn. Environ.* **2015**, *24*, 935–937. [CrossRef]

49. Clegg, S.; Hudson, A.; Steel, J. The emperor's new clothes: Globalisation and e-learning in higher education. *Br. J. Social. Educ.* **2003**, *24*, 39–53. [CrossRef]
50. Peters, O. Distance Education and Industrial Production: A Comparative Interpretation in Outline (1973). Otto Peters on Distance Education: The Industrialization of Teaching and Learning, 1994; pp. 107–127. Available online: http://www.c3l.uni-oldenburg.de/cde/found/peters67.htm (accessed on 7 March 2017).
51. Alexander, F.K. The changing face of accountability: Monitoring and assessing institutional performance in higher education. *J. Higher Educ.* **2000**, *71*, 411–431. [CrossRef]
52. Simpson, O. The impact on retention of interventions to support distance learning students. *Open Learn. J. Open Distance e-Learn.* **2004**, *19*, 79–95. [CrossRef]
53. Ferguson, R.; Barzilai, S.; Ben-Zvi, D.; Chinn, C.A.; Herodotou, C.; Hod, Y.; Kali, Y.; Kukulska-Hulme, A.; Kupermintz, H.; McAndrew, P.; et al. *Innovating Pedagogy 2017: Open University Innovation Report 6*; The Open University: Milton Keynes, UK, 2017.
54. Al-Mutawa, A. *Higher Education in the Digital Age, Higher Education in the Gulf States: Present & Future*; Springer: Berlin, Germany, 2017.
55. Adams Becker, S.; Cummins, M.; Davis, A.; Freeman, A.; Giesinger, H.C.; Ananthanarayanan, V. *NMC Horizon Report: 2017 Higher Education Edition*; The New Media Consortium: Austin, TX, USA, 2017.
56. Ferguson, R. Learning analytics: Drivers, developments and challenges. *Int. J. Technol. Enhanc. Learn.* **2012**, *4*, 304–317. [CrossRef]
57. Arshad, K.; Imran, M.A. Increasing the interaction time in a lecture by integrating flipped classroom and just-in-time teaching concepts. *Compass J. Learn. Teach.* **2013**, *4*, 1–18. [CrossRef]
58. Bishop, J.L.; Verleger, M.A. The flipped classroom: A survey of the research. In Proceedings of the ASEE National Conference, Atlanta, GA, USA, 23–26 June 2013.
59. Hoffman, E.S. Beyond the Flipped Classroom: Redesigning a Research Methods Course For e^3 Instruction. *Contemp. Issues Educ. Res.* **2014**, *7*, 51–62. [CrossRef]
60. Hughes, H. *Flipping the College Classroom: Participatory Learning*; Practical Applications and Experiences in K-20 Blended Learning Environments; IGI Global: Hershey, PA, USA, 2013; Volume 137.
61. Elliott, C. Using a personal response system in economics teaching. *Int. Rev. Econ. Educ.* **2003**, *1*, 80–86. [CrossRef]
62. Savery, J.R. Overview of Problem-based Learning: Definitions and Distinctions. *Interdiscipl. J. Probl.-Based Learn.* **2006**, *1*, 9–20. [CrossRef]
63. Zhang, D.; Zhao, J.L.; Zhou, L.; Nunamaker, J.F., Jr. Can e-learning replace classroom learning? *Commun. ACM* **2004**, *47*, 75–79. [CrossRef]
64. Antonio, A.; Martin, N.; Stagg, A. Engaging higher education students via digital curation. In Proceedings of the 29th Australasian Society for Computers in Tertiary Education: Future Challenges, Sustainable Futures, Wellington, New Zealand, 25–28 November 2012; pp. 55–59.
65. Lee, M.J.; McLoughlin, C. Teaching and learning in the Web 2.0 era: Empowering students through learner-generated content. *Int. J. Instr. Technol. Distance Learn.* **2007**, *4*, 21–34.
66. Bawden, D. Origins and concepts of digital literacy. *Digit. Lit. Concepts Policies Pract.* **2008**, *30*, 17–32.
67. Martin, A. DigEuLit—A European framework for digital literacy: A progress report. *J. eLiteracy* **2005**, *2*, 130–136.
68. Baggaley, J. MOOC rampant. *Distance Educ.* **2013**, *34*, 368–378. [CrossRef]
69. Halasek, K.; McCorkle, B.; Selfe, C.L.; DeWitt, S.L.; Delagrange, S.; Michaels, J.; Clinnin, K. A MOOC with a view: How MOOCs encourage us to reexamine pedagogical doxa. In *Invasion of the MOOCs: The Promise and Perils of Massive Open Online Courses*; Parlor Press: Anderson, SC, USA, 2014; pp. 156–166.
70. Johnson, D.; Nafukho, F.; Valentin, M.; Lecounte, J.; Valentin, C. The origins of MOOCs: The beginning of the revolution of all at once-ness. In Proceedings of the 15th International Conference on Human Resource Development Research and Practice across Europe, Edinburgh, UK, 4–6 June 2014.
71. Ng, A.; Widom, J. *Origins of the Modern MOOC (xMOOC)*; MOOCs: Expectations and Reality: Full Report; Tirthali, D., Hollands, F.M., Eds.; Center for Benefit-Cost Studies of Education, Teachers College, Columbia University: New York, NY, USA, 2014; pp. 34–47.

72. Kop, R.; Hill, A. Connectivism: Learning theory of the future or vestige of the past? *Int. Rev. Res. Open Distrib. Learn.* **2008**, *9*. [CrossRef]
73. De Waard, I.; Abajian, S.; Gallagher, M.S.; Hogue, R.; Keskin, N.; Koutropoulos, A.; Rodriguez, O.C. Using mLearning and MOOCs to understand chaos, emergence, and complexity in education. *Int. Rev. Res. Open Distrib. Learn.* **2011**, *12*, 94–115. [CrossRef]