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Editorial

Special Issue: Open Universities: Past, Present and Future

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Fifty years since the establishment of the Open University in the United Kingdom (UKOU) seems an appropriate time to evaluate the current status of and outlook for the world's open universities. There is much to celebrate, not only in the UK, but also in the 60-80 (depending upon definitions) open universities around the world. The rapid development of communication technologies has both enhanced and challenged the particular role of the open university. This special issue of IRRODL offers a number of perspectives on its evolution in many different national settings – what it has achieved, the challenges it faces and its options for the future.

There are an estimated 8 million students in open universities around the world, with more such institutions still being created. This underlines the success of open universities since the inception of the UKOU in 1969, an achievement of extending educational boundaries that stands up well against the dramatic expansion of physical boundaries represented by the moon landing of the same year. The Open University model fundamentally changed notions as to who should and could benefit from a university education and the approaches to teaching and learning that would facilitate such access. For more depth on the UKOU, readers are referred to the perspectives of its founding Vice-Chancellor (Perry, 1976) and a much more recent history (Weinbren, 2015).

The origins of this special issue lie not only in celebrating the Open University model but also in looking beyond its success to the critical challenges that have arisen in the 50 years since its inception. In the last 10 years, the UKOU has lost about one-third of its students, primarily due to an enormous rise in fees in England accompanied by a student loan model that appears comprehensively unattractive to the adult part-time learner. This poses an urgent question as to whether the Open University model can move and flourish from a broadly social democratic political orientation to the more recently developed neo-liberal social model. While discretion precludes more detail, four of the eight open universities in Europe have had existential threats over the same period for a range of different reasons and, like many of its counterparts, Athabasca University in Canada has struggled in adjusting to increased competition from traditional institutions. In Asia, where there has been more investment in the Open University model than anywhere

else, open universities have struggled, at least in some countries, to gain a reputation for quality or to achieve acceptable levels of programme completion and graduation.

The early open universities pioneered a number of features that were truly radical. The invention of the Open University mission for mainstream rather than marginal inclusion of new audiences at such a large-scale changed the broad social understanding of who could go to university. Secondly, and concomitantly, there had to be a new focus on learning and teaching to support students who were first-time entrants from families without prior higher education and for whom the challenges of learning at a distance demanded study skills, self-confidence, and social capital which could not be assumed. Thirdly, open universities committed early and firmly to the deployment of new technologies to support learning and teaching, pioneering industrial methods of course production and design and student services. Fourthly, the very idea of such large-scale universities was significantly different, though not unique. Lastly, and more broadly, open universities thought of themselves as having embedded innovation. They existed in order to change how post-secondary education was conceived, and acted as a vanguard for the move from elite to mass higher education systems.

This special issue was born out of the concern that the first-mover advantage of the open universities has been substantially eroded by developments elsewhere in the university sector in many countries, and, further, that this has in many cases not been adequately noticed nor indeed addressed by the open universities themselves. Many of the features that were developed for the first time on any significant scale by open universities are now more widely shared as the move to mass higher education is near universal in developed countries and increasingly the case in middle income countries. These features include a much wider recognition that part-time routes to study have to accompany the traditional full-time campus-based modes, and that the much wider range of student backgrounds in mass higher education has to be accompanied by commitments to reform teaching and student support. New entrants, notably online universities and traditional institutions moving significantly to online and blended learning, provide significant competition for longer established open universities, some of which have struggled to move from earlier distance education methods into online modes. So, in most countries, open universities are increasingly struggling to maintain their primacy in a much more competitive and complex environment of blended learning and dual-mode campuses. While a few governments have kept the monopoly position of their open university to deliver part-time and distance education for the country, this is less and less sustainable in the face of burgeoning new technologies for teaching on so many campuses.

Projecting ahead 15 years or so, the United Nations Sustainable Development Goals propose, as both necessary and desirable, a major increase in post-secondary education and lifelong learning, in effect moving to deliver mass higher education in upper, middle, and many lower middle income countries. This pertains to nations on the scale of China, India, Brazil, and South Africa, or, more widely, Asia, Africa, and Latin America. Some 30-50 years ago, the natural solution to such large-scale provision of lifelong higher education was restricted to the Open University model. Today, the question is whether this model retains the dynamic energy and innovatory character to be entrusted with that task. Or will a wider range of models including blended delivery, dual mode campuses, and new online universities (notably private for-profit organisations) crowd out the place of open universities in the higher education landscape?

The prime characteristic of open universities in their foundation stages was their capacity to innovate, and to do so fearlessly. Their place as a key institutional model for the future in countries at all stages of development will be the sustainability of that capacity to offer innovation. How can open universities reinvent themselves as the most exciting organisational model to meet contemporary needs for new audiences in innovative ways? We have paid attention in the past to leadership in open and distance education (Paul 1990; Paul 2011; Tait 2008b), and it is in the development of high-quality distributed leadership in open universities that the capacity to innovate can be most effectivity sustained. We would summarise our evaluation of the present situation with the SWOT analysis in Figure 1.

Strengths	**Opportunities**
• Commitment to openness, flexibility, and access. • Capacity for large-scale provision. • Support for part-time students, working adults. • Commitment to technology-enhanced learning.	• World-wide access to the Internet. • UN's sustainable development goals for major expansion of higher education. • Use experience to develop quality assurance for mass higher education systems. • Trends to international collaboration, open educational resources. • International trends to lifelong learning and continuous professional upgrading.
Weaknesses	**Threats**
• Completion and graduation rates. • Reputation and brand. • Staff resistance to change. • OU model based on very large student-to-staff ratio.	• Burgeoning mainstream university involvement in online and blended learning. • Governmental disenchantment with OU model. • Supreme value of elite education. • MOOCs and other innovations from mainstream universities.

Figure 1. SWOT analysis for open universities.

There are two priorities for leadership at all levels that we propose for particular attention. Firstly, open universities have a tendency deriving from their uniqueness in their national contexts to become inward-looking and to fail to study the changing external environment with insight and to develop accordingly. Secondly the claim of quality has rarely been made effectively, leaving the public discourse identifying quality as the work done by highly selective rather than open institutions. In too many cases, the quality of curriculum as well as learning and teaching and student support have fallen short. It is with this range of concerns that this special issue has been drawn up.

The collection articles represent the work and perspectives of 13 authors from 11 different countries**.** As might be expected, the writers do a better job of presenting the achievements of open universities and their current challenges than they do in prescribing what is necessary to ensure their continuing success in higher education. Campus-based universities are changing swiftly with the rapid evolution of communications technologies, with much of this change informed by the success of the world's open universities. Somewhat ironically, these changes have blurred the distinctions between campus and distance institutions, in the process making it more difficult for open universities to maintain a clear and separate institutional identity. In this sense, they have been victims of their own success.

The co-editors of this special edition have been both colleagues and friends since initially meeting at the 1982 ICCE/ICDE conference in Vancouver. They have both been very engaged in the evolution of open universities from their earliest days in very different ways. Ross Paul spent 11 years at Athabasca University (10 as Vice-President Academic and one as Acting President) before taking up the presidencies at more traditional institutions in Ontario (Laurentian University, the University of Windsor). He is particularly interested in institutional management and leadership, having written respective books on open learning and open management (Paul, 1990) and the challenging role of the Canadian university president (Paul, 2015). Alan Tait is Emeritus Professor of Distance Education and Development at the Open University UK. From 2013-2015, he was Director of International Development and Teacher Education, and, before that, Pro-Vice Chancellor (Academic) and previously Dean of the Faculty of Education and Language Studies. He has had a particular interest in social justice and student support, and was for many years a co-host of the very successful series of Cambridge conferences with the late Roger Mills. Both editors have written recently about the contributions of and challenges facing the world's open universities (Paul, 2016; Tait, 2008a; Tait, 2018).

Grouping of Articles

The papers in this special edition are organized into four general themes:

History/Evolution

Two of the articles pay particular attention to the evolution of the open university in their respective contexts. **Weiyuan** and **Li** look at the transformation of the Radio and Television universities (RTVUs) in China and the recent promotion of five institutions to Open University status. Four issues of university reform are highlighted in their analysis of these institutions and the challenges they face, specifically, key performance indicators (KPIs), cohesion and resource sharing between National OUs and their provincial counterparts, quality assurance for award bearing programs, and their implications for the transformation of the remaining provincial RTVUs to OUs.

Using auto-ethnographic interviews, **Lee** explores the perceptions and feelings of eight faculty members in two institutions (in Canada and South Korea) about the changes in their teaching practice brought about by their experience in open universities. Three interrelated themes emerge in the resulting narratives – stories about openness, excessive openness and a lost sense of mission; stories about technological innovation in the face of long-lasting resistance; and stories about teaching (transactional interactions and feelings of loneliness). The paper then presents a discussion of useful implications for open universities as a starting point for more meaningful discussions among distance educators in a time of change.

Case Studies

Five of the papers look at specific issues through the example of experiences at open universities in different national contexts – Turkey, Mexico, South Africa, Mauritius, and Brazil.

Bozkurt considers the contributions of Anadolu University in Turkey, notably in narrowing the information gap and digital divide by enhancing equality of educational opportunity and extending lifelong learning opportunities to many. As such, he suggests Anadolu as a role model for other higher educational institutions in his country.

Cervantes, Bucio, Vadilo, and **Herrera** analyse the evolution of openness at Mexico's national university (UNAM). Using the *Open Online Flexible Provision of Technology-Enhanced Higher Education* (OOFAT) model, the authors assess the evolution of various components of openness over three time periods). Readers may find the OOFAT model useful for pursuing similar analyses in their own national contexts.

The University of South Africa (UNISA), a pioneer institution in open and distance learning (ODL), is one of the first institutions to shift from ODL to open and distance e-learning (ODel). **Nsamba** assesses and determines the maturity levels of UNISA's lecturers' and tutors' explorations of various forms of e-learning technologies to support students in an ODel environment. The Online Course Design Maturity Model (OCDMM) was modified and adapted in order to guide data collection and analysis and the interpretation of results. It is hoped that this assessment will serve as a starting point for UNISA to constantly measure improvements in advancing e-learning activities.

Quality assurance is the focus of **Carr's** case study of the Open University of Mauritius (OUM). While there is a growing body of literature in QA best practices, there has been little investigation into the factors that influence such institutions to improve or adopt QA. The author advances a framework for understanding drivers of institutional QA at UOM. A better understanding of the drivers for change in QA can help open universities plan the implementation of QA mechanisms in a more comprehensive and systematic way in developing a culture of quality that responds to the unique ideological and practical context of open and distance learning.

The last of the case studies concerns the Open University of Brazil (OUB), which is neither a university nor open. It is, rather, a consortium of public federal, state and municipal face-to-face institutions which nevertheless has made contributions to distance education in Brazil. **Baxto, Amaro,** and **Mattar** look in particular at the challenges it faces in improving the quality of learning support centres, labour relations and other issues related to the hiring of face-to-face and online tutors, and the structure of course content production. The case study will be of particular interest to those trying to initiate open and online learning changes in traditional institutions.

Overarching Theme

Four other papers use very different ways of looking at open universities to explore some very specific issues:

Lucena, Diaz, Reche, and **Rodriguez** provide a tour of open university research output through the literature of the past 40 years. Examining over 800 papers published in prestigious journals from 1969-2018, the authors analyze the resulting output scattering and impact bibliometric indicators. They suggest that the scientific output of open universities is in a phase of exponential growth.

Student persistence in open universities is the central concern of **Li** and **Wong**. Reviewing 108 empirical studies from the 1970's to the present, they identify 284 factors influencing student persistence which they then categorize into student factors, institutional factors and environmental factors, and their changes and trends over the years. Based on the results, the implications for developing intervention and retention strategies in open universities are discussed.

A thoughtful perspective on what makes open universities unique is offered by **Jeong.** Her focus is on the elusive challenges of establishing a clear identity for a given institution, especially in an age when more and more traditional universities are adopting distance education and online learning courses and programs. Their quest to be recognized as "genuine universities" through their particular quality assurance systems has led open universities to develop regional networks and a greater emphasis on research. Considering open admissions and the industrialization of teaching and learning, Jeong offers the term "network university" to differentiate open universities from their traditional counterparts.

Devries looks to the websites of open universities to understand better their unique contributions to higher education, exploring key themes of distance education and open educational practices. The study concludes that, with the growth of open distance education, online learning, and other emerging open educational practice, open universities can remain uniquely positioned in their ability to meet the growing need for higher education globally by increasing the scope of their open educational practices and clearing reflecting these on institutional websites.

Current Challenges

The special issue concludes with a focus from two of the best-known practitioners on the current challenges facing open universities and what they need to do to ensure their future success. While recognizing the huge impact of open universities over the past half century, **Guri Rozenblit** focuses on their current challenges, including the blurring of boundaries between distance teaching and campus-based universities. This leads her to suggest the need for better collaboration among the different types of higher educational institution and the work and corporate worlds in the contexts of lifelong learning, professional upgrading and managing huge numbers of students.

Following Prasad's 2018 identification of the disconnect between the social purposes that open universities proclaim and how well they fulfill them, **Daniel** revisits his concept of the "iron triangle" of access, cost, and quality, and asks how it applies to distance education with today's technologies. He goes on to explore the contemporary implications of a 1970's distinction between independent and interactive learning activities. Informed by a 2017 meeting of Open University executive heads, he looks at economic models, technology, governance, and teaching issues as open universities endeavour to thrive in an era when online offerings from campus institutions are expanding rapidly.

Conclusion

None of the concerns and challenges posed above takes anything away from the very significant achievement of many open universities over the last half-century. It is true to say that they have changed the understanding of who can go to university from the perspectives of gender, geography, ethnicity, disability, and social class. Open universities have won many battles of ideas about accessibility and how technologies can be used to create systems of learning, teaching, and student support at large scale.

It should be noted that many countries with large populations distributed over large distances have not followed the open university model. Examples include Russia, Brazil, Australia, the USA, and France. While the profiles of post-secondary provision in these countries is very different, it can be concluded that there is no absolute necessity to establish an open university in either rich or middle-income countries. In other words, having an open university is a choice. We hope the following rich accounts of open universities from all around the world will strengthen the analysis of what they have achieved, and how they might continue to occupy leadership positions in the provision of higher education for many more countries. It is our conviction that sober reflection is necessary to strengthen the case that open universities, as an educational model, will be as influential in the future as they have been in the past.

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Transformation From RTVUs to Open Universities in China: Current State and Challenges

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Abstract

Open and distance education has been playing an important role in China's development of higher education and lifelong learning. In 2012, the Chinese government approved six large-scale radio and television universities (RTVUs) to become open universities (OUs), including the Open University of China (OUC), Beijing Open University (BJOU), Shanghai Open University (SHOU), Guangdong Open University (GDOU), Jiangsu Open University (JSOU), and Yunnan Open University (YNOU). The purpose of this study is to provide a descriptive analysis of the transition from RVTUs to OUs, and the current state and challenges of open universities in China after five years' reform. Five topics are explored in this paper, including: the new positioning of open universities in China's vast and differentiated higher education system; award bearing and non-award bearing program offerings; implementation of the online teaching and learning modes; the use of Open Education Resources (OER) and online mini-courses; and the development and use of a credit bank system. A summary of these topics follows a discussion of four issues of open university reform, including key performance indicators (KPIs) for open universities, cohesion and resource sharing between the national and provincial open universities, quality assurance for award bearing programs, and planning to transform China's existing 39 provincial RTVUs into OUs. It is expected that the results of this study would contribute to knowledge about institutional differentiation in the world's largest higher education system, and on the merits of open and distance education in the human resource development in China. This paper may also provide insight for other countries that are engaged in institutional differentiation of higher education systems punctuated by the essential role of open universities in such planning and implementation.

Keywords: open and distance education, open universities, online teaching and learning, open education resources, credit bank system

Introduction

Open and distance education (ODE) has been an essential part of the lifelong education system in China. An ever-changing information and communication technology infrastructure and continuous social and economic development have enabled widespread uptake of ODE in China. The open and distance education institutions in China started as correspondence colleges housed in conventional universities in the 1950s and developed into radio universities (RUs) and television universities (TVUs) in the 1960s. After the Cultural Revolution in the 1970s, a national strategy resulted in the opening of radio and television universities (RTVUs) across the country. Other reforms took place in the 1990s, particularly with the push to create a mass system of higher education, to create a modern distance education system in China, and to increasingly blur the lines between conventional and distance education programs. The most recent reform was in 2012 when a handful of RTVUs, including the Central RTVU in Beijing, were transformed into Open Universities (OUs) within the context of promoting of learning society in the 21st century in China (Hao, 2017).

In the early 1960s, with the development of Radio and TV as well as the social demand for the higher education, RUs and TVUs were established in several central cities, including Beijing, Shanghai, Guangzhou, Shenyang, Changchun, and Harbin. For example, in Harbin, in 1961, the Harbin Municipal Committee decided to set up Harbin Broadcasting Normal University and Harbin TV University and for meeting the huge demand of learning. The teachers from the conventional universities in Harbin carried out teaching by broadcasting or recording at Harbin TV and Broadcasting Station. There were almost 10,000 students enrolled in the first year and many of them were factory workers, government officers, school teachers, and cadres who had graduated from high school (Zhang, 1960). However, the RUs and TVUs were suspended during the 10-year Cultural Revolution, which ended in 1976 (Ge, 2008). After the Cultural Revolution, the national economy, education, science, and technology sectors were in need of technical expertise. As such the workforce needed to be revitalized and advanced training at scale was deemed essential. In 1976, approximately 12 of 10,000 people possessed a higher education qualification, ranking as the ninth lowest in the world (Yang, 2011). In 1978, after meeting with the formal British Prime Minister, Edward Heath, who championed the successes of the UK Open University, the Chinese Vice Premier, Deng Xiaoping, decided to use radio and TV education to address the huge demand of higher education for the whole country and, under this context, the radio and television universities were opened (Ge, 2012). In 1979, the Central Radio & Television University (CRTVU) and 28 provincial radio and television universities were established (Wei, 2015). As a result, a comprehensive open and distance education system, the RTVU system, was organized at the central, provincial, urban, and rural levels.

Hereafter, the development of RTVUs could be summarized into three stages. From 1979 to 1989, RTVUs carried out higher education for employees, school teachers, and urban youth through radio and television. Many of them could not get access to the higher education system during the 10-year Cultural Revolution. At this stage, along with the Chinese Reform and Opening-up Policy, and the acceleration of expansion of big cities, some cities, such as Ningbo City in Zhejiang Province, had also established radio and television universities. From 1990 to 1998, RTVUs provided different types of education involving adult education, general college education, and continuing education, through radio and television programs, video, and computer mediated learning. By 1998, the RTVU system was assembled into one national CRTVU and 44 provincial radio and television universities (Ge, 2012). From 1999 to 2010, RTVUs complemented existing

learning options with online learning offered in various programs at different levels. At this stage, the enrollment and the scale of RTVUs expanded rapidly, which was increased from 0.95 million to 2.95 million, making the RTVU system one of the largest "universities" in the world (CRTVU, 2010). Special education programs were also provided for target groups including farmers, disabled people, military officers, and minority groups. In 2010, as a nationwide management system, the RTVU system had one CRTVU, 44 provincial radio and television universities, over 1,000 city-level colleges, and 3,000 county-level learning centers (Li, 2014).

In 2010, the State Council of China (2010a) issued *the Outline of China's National Plan for Medium and Long-term Education Reform and Development (2010-2020)*. The plan consists of a preamble, four sections, and implementation measures. It proposed the strategic goal of "realizing basic educational modernization, building a learning society, and turning China into a country with rich human resources" (p. 14) by 2020. In order to propel "building a flexible, open system for lifelong education" (p. 15), the *Outline* explicitly came up with the task "to establish and run the open universities well" (p. 33). Then the State Council of China (2010b) initiated *The Exploration of the Open University Model with Chinese Characteristics*, as one of reforms of the national education system, and approved CRTVU and five provincial RTVUs to start a "1+5" pilot transformation from RTVUs into OUs.

On a two-year trial basis, the Open University of China and five provincial OUs were formally established upon approval of the Ministry of Education (MOE) in China. According to the MOE (2012a), the OUs in China were "the new type universities carrying out open and distance education mainly for adults supported by the use of modern information and communication technology" (p. 1). From then on, the Open University of China and five provincial OUs entered a new development stage. Although the reform of 1+5 open universities was implemented over five years since 2012, limited comprehensive research has been done on critically analyzing the achievements, effectiveness, challenges, etc. of this transformation.

The purpose of this study is intended to evaluate the achievements, effectiveness, challenges, and key issues of future development of open universities in China. It is hoped that the results of the study could be useful for reference for RTVUs planning to transition to open universities and that the experiences of open and distance education reform in China could be shared by other countries seeking to differentiate their higher education systems by including open universities to widen enrolment.

Methods

Samples

The "1+5 open universities" in China were selected for this study and their basic information was summarized in Table 1 (MOE, 2012a, 2012b, 2012c, 2012d, 2012e, 2012f).

Table 1

Overview of Sampled Six Open Universities

Name	Establishment	Former name	Region	No. of students in 2017 (in thousands)
The Open University of China	July 2012	China Central Radio & Television University	Nationwide	3,590
Beijing Open University	July 2012	Beijing Radio & Television University	Beijing city	72
Shanghai Open University	July 2012	Shanghai Radio & Television University	Shanghai city	157
Jiangsu Open University	January 2013	Jiangsu Radio & Television University	Jiangsu Province	111
Yunnan Open University	December 2012	Yunnan Radio & Television University	Yunnan Province	171
Guangdong Open University	August 2013	Guangdong Radio & Television University	Guangdong Province	216

Table 1 shows that, apart from the Open University of China, five local OUs are spread over China's two largest cities (Beijing and Shanghai), the industrialized coastal regions (Jiangsu Province and Guangdong Province), and the southwest minority region (Yunnan Province).

Procedures

There were three steps in this study. First, a literature review was conducted for clarifications of the context of OUs from the perspective of history and the current state, especially the policy changes and their impact on OUs. Second, the data were collected from six open universities for analyzing the strategic development and outcome during the five years' reform. Third, discussion and implementations took place on the reform achievements, problems, and challenges of the OUs in China, as well as future open and distance education development in China.

Data collection and comparative analysis. The relevant policies, speeches, reports, and papers from China Academic Journal Network Publishing Database, Ministry of Education in China database, and various websites from six open universities and 39 provincial RTVUs were collected and reviewed in order to understand and analyze the origins, processes, results, problems, and challenges of the transformation from RTVUs to OUs. The data on number of award bearing and non-award bearing programs, teaching and learning modes, use of Open Educational Resources (OER), online mini-courses, and the credit bank system of the sampled six open universities were collected, analyzed, and compared.

Results

The major results of this study could be classified into five aspects: (1) new position of open universities in China's system of higher education, (2) award bearing and non-award bearing program offering, (3) online teaching and learning mode, (4) OER and mini-courses, and (5) a credit bank system.

New Position of Open Universities in the Ecology of Higher Education in China

RTVUs were deemed as the beneficial complement of conventional universities (Chen et al., 2013). As a new type of university, open universities are considered as equal to conventional universities.

At the opening ceremony of the three open universities, namely the Open University of China, Beijing Open University, and Shanghai Open University, Deputy Premier Yandong Liu pointed out that open universities in China were open to anyone, open to anytime, and open to anyplace (Wu & Chang, 2012). The open universities should offer different levels of continuing education programs and provide learning platforms on lifelong learning for all people in China. She also mentioned that the open universities and conventional universities should have staggered development, which means that there are two different types of universities in the Chinese higher education system, and that they need to accept and keep the differentiation. They hold many differences, such as mission, position, target group, and teaching and learning mode in Chinese higher education system, which form a complementary system and provide lifelong learning opportunities for all (Zhang, 2011). Table 2 gives some examples of their differences.

Table 2

The Differences Between Open University and Conventional University in China

Differences	Open University	Conventional University
Mission	Education for all.	Elite education & Professional Education
Provision	1. Degree education, such as undergraduate education, associate degree education. 2. Non-degree training, such as community education, education for the elders, vocational skills training.	Degree education, such as bachelor, master, and doctor.
Target group	Various, such as farmers, immigrant workers, disabled, elders, militaries, ethnic minorities.	School age youth
Admission	Open admission. For example, a student with a diploma can enroll in an undergraduate degree.	Selective admission by the National College Entrance Examination (NCEE). In 2018, about 9.75 million students attended the NCEE, but only 2% can be accepted by "985 Project" universities, which are the 39 top universities in China.

Professor Keming Hao (2012), former chairwoman of the Chinese Society of Educational Development Strategy and member of the National Education Development Advisory Committee, stated that open universities in China were distinguishable as higher education institutions due to their focus on lifelong

learning, geographical reach, flexibility, and use of advanced technology for meeting the learning needs of a large and diverse society.

With the transformation from RTVUs, the open universities have become an important component of higher education, with their marked functions and mission, as well as their enrollment in China. In 2017, the enrollment in the open universities was about 4.01 million, accounting for 10.62% of the total enrollment in the higher education system (MOE, 2018). It can be seen that the open universities are indispensable for facilitating the reform and development of higher education in China.

Award Bearing and Non-Award Bearing Program Offering

Award bearing program offering. Some scholars (Chen, Zheng, & Yin, 2013; Hao, 2012; Wang, 2016) pointed out that autonomy should be one of the characteristics of universities in China, but this has been a challenge to the RTVUs for several decades.

An important difference between the RTVUs and the OUs is the right to award degrees. During the period of the RTVUs, the CRTVU cooperated with conventional universities to award bachelor degree. English degrees, for example, were jointly awarded by Beijing Language and Cultural University. The 44 provincial RTVUs did not have the right to issue degrees independently, but to be a branch of the CRTVU. But now, as open universities, they all have the right to award degree programs independently (MOE, 2012a).

Some of the reasons for this change are the trends of decentralization of education management, and to meet the different needs from the local economy and social development (Li, 2014).The award bearing programs of China's open universities are aimed at augmenting the knowledge and qualifications of professionals. For example, by developing and offering undergraduate degree programs in engineering, information security, and robot engineering, Guangdong Open University (2017) was responding to the industry needs in the region, which was well-recognized by the Guangdong Government. This has been the norm among all six open universities. Jiangsu Open University (2017) worked with JDcom, the largest online retailer in China, to establish the College of JDcom E-commerce for providing e-commerce related degree programs to meet local economic development needs. From 2012 to 2017, the number of undergraduate degree programs has been growing, as detailed in Table 3 (Beijing Open University, 2017; Guangdong Open University, 2017; Jiangsu Open University, 2017; Open University of China, 2017; Shanghai Open University, 2017; Yunnan Open University, 2017). There has been tremendous growth among all six open universities in the expansion of degree programs. In total, the number of degree programs increased two and a half times during 2013-2017.

Table 3

The Number of Bachelor Degree Programs Awarded Independently by Six Open Universities

Name	Before 2012 (RTVUs)	2013	2017
The Open University of China	0	19	29
Beijing Open University	0	4	24
Shanghai Open University	0	3	8
Jiangsu Open University	0	4	10
Yunnan Open University	0	4	15
Guangdong Open University	0	4	10
Total	0	38	96

Table 4 shows the number of students enrolled in the five provincial open universities in 2017. An important change is that these five universities, during the RTVU period, were not able to issue their own degrees independently, but had to comply with the degree requirements of the CRTVU. After becoming open universities, they were able to independently issue their own degrees. At the same time, they still cooperated with and were branches of the OUC. They recruited students in the name of the OUC and issued the OUC degree.

Table 4

*The Distribution of Enrollments in Six Open Universities in 2017**

Name	For itself	For the OUC	Total
Beijing Open University	4	68	72
Shanghai Open University	96	31	157
Jiangsu Open University	26	85	111
Yunnan Open University	137	34	171
Guangdong Open University	11	205	216

**Note.* All numbers are in thousands.

Non-award bearing program offering. As required by the Ministry of Education (2012a, 2012b, 2012c, 2012d, 2012e, 2012f), the open universities need to "promote non-degree education and training for meeting various and diverse needs of Chinese people" (p. 2). After 2012, all six OUs continued developing and offering non-award bearing programs to meet the needs of lifelong learning for all people, under varying sub-institutions (Jiangsu Open University, 2017; Yang, 2013b; see Table 5).

Table 5

Sub-Institutions Under RTVUs Before and After 2012

Name	Before 2012 (RTVUs)	After 2012
The Open University of China	College for Disabled People. Center for Community Education of MOE.	College for Disabled People. Center for Community Education of MOE. University for the Third Age. College for Migrant Workers. College for McDonald employees.
Beijing Open University	University for the Third Age.	University for the Third Age. Center for Community Education in Beijing.
Shanghai Open University	College for Disabled People.	College for Disabled People. College for the Third Age. College for Craftsmen. College for Women. Center for Learning Society in Shanghai.
Jiangsu Open University	College for Disabled People.	College for Disabled People. University for the Third Age. Center for Social Education in Jiangsu Province.
Yunnan Open University		College for Disabled People. College for Farmers. Center for Lifelong Education in Yunnan Province.
Guangdong Open University		University for the Third Age. Center for Community Education in Guangdong Province.

It can be seen from Table 5 that, apart from offering degree programs for adults, open universities have strived to support a differentiated system based on inclusiveness and equality.

Online Teaching and Learning Mode

Transformation of teaching and learning from radio, television, and multimedia to Internet-based has been a significant change for the RTVUs to become OUs. The Ministry of Education (2012g) promulgated the *Development Plan for the Ten Years of ICT in Education*, marking the open universities as "a test field, a demonstration area and one of the leaders in the development of ICT in education in China" (Hao, 2017, p. 5). It is highly related to the demand and context of the ubiquity of Internet use in China, which stands at nearly 800 million users (CNNIC, 2018). Chinese President Jinping Xi, in acknowledging this growth, asserted that leveraging the Internet to advance learning will be a driving force for economic growth (Hua, 2016). According to the plan:

> The open universities are the main force for building public service platforms for continuing education, providing services to the whole society, building a convenient, flexible and personalized

> ICT-based learning environment for learners, and facilitating the construction of Lifelong learning system and learning society. (MOE, 2012g)

Since then, China's six open universities have been committed to adopting online teaching and learning, thereby promoting the integration of ICTs in education and teaching. The Open University of China puts forward a policy entitled, "Six-network Integration Mode," based on six core elements of online teaching and learning. They are: online learning space, online management, online courses, online tutoring teams, online learning support, and online assessment (Yang, 2013a). Yunnan Open University has proposed an online learning model based on a knowledge map. President Luo (2015) of the Yunnan Open University said that, according to the analysis of the structure and deconstruction of knowledge, the learning materials of knowledge have a tree-shaped structure, which can be described as a knowledge tree map that includes key knowledge levels of micro knowledge. Under the guidance and assessment of teachers, as well as the use of computers, learners deconstruct learning materials into a knowledge map. Yunnan Open University formulates learning methods for beginners and senior learners according to the knowledge map, and programs software that guides learners to extract key knowledge, to decompose micro knowledge from the learning materials, and to build a knowledge tree. Jiangsu Open University has promoted the massive private online course (MPOC) model. It has organized online classes based on different time zones, regions, and needs of learners, which is good for providing stratified teaching (Cui, 2018a). Finally, Beijing Open University (2017) has established the Institute of Artificial Intelligence to promote research of ICT in education.

OER and Mini-Courses

The Ministry of Education (2012a, 2012b, 2012c, 2012d, 2012f) requested all open universities to build learning resources based on the curriculum, make full use of quality education resources, and promote the sharing of learning resources. As a fundamental task, the six open universities have made innovations in exploring the mechanisms and OER products.

All six OUs have set alliances with industry, enterprises, and media for designing and developing online OER for resource sharing. For example, Jiangsu Open University (2017) established a resource sharing alliance with the Jiangsu Radio and TV Education Channel, Jiangsu Audio-Visual Education Center, Telecom Company, and Phoenix Media Group. It also signed a strategic cooperation agreement with Shanghai Jiaotong University to share quality learning resources for the public (Cui, 2018b). The Open University of China (2017) cooperates with industry, enterprises, colleges, and conventional universities to establish one National Digital Learning Resources Centre in Beijing and 249 online learning resource development centers in 31 provinces, providing and gathering high-quality degree and non-degree digital learning resources.

From 2012 to 2017, the Open University of China (2017) has been a mass provider of OER. This has included tens of thousands of courses, free-to-use lectures, a digital library, and special learning websites that are open to the public. Over 30,000 mini-courses, covering various disciplines, are widely used by adult learners for meeting their learning needs. Guangdong Open University (2017) has built the Guangdong Lifelong Learning Network, including 66,211 open online courses. Shanghai Open University (2017) has

developed the Shanghai Learning Network, offering more than 28,000 online courses with 3 million registered users. The OER developed by the six OUs are summarized in Table 6.

Table 6

The Website and Number of OER in Six Open Universities

Name	OER websites	Disciplines	The number of OER
The Open University of China	Online mini-course website. (http://www.5minutes.com.cn/)	11	30,000
	National E-learning Resource Center. (http://www.nerc.edu.cn)	11	146,834
Beijing Open University	Beijing Citizens Lifelong Learning Network. (http://www.bjlearning.cn/)	4	5,200
Shanghai Open University	Shanghai Learning Network. (http://www.shlll.net/main/index.html)	9	28,000
Jiangsu Open University	Jiangsu Study Network. (http://www.js-study.cn)	9	33,379
Yunnan Open University	Yunnan Online Learning College for Cadres. (http://www.yngbzx.cn/)	6	18,000
Guangdong Open University	Guangdong Lifelong Learning Network. (http://www.gdlll.cn/)	10	66,211

Credit Bank Systems

The establishment of qualifications frameworks (QF) for lifelong learning has been popularized worldwide (Zhang, 2014). They have been used for the articulation and communication among conventional education, vocational education, continuing education, and corporate training for mutual recognition of learning credits. In 2010, The State Council (2010b) started a pilot project of establishing QF and a "credit bank" system in China, and decided to include the open universities in the project. One of the reasons is that promoting formal, non-formal, and informal education is an essential feature of open universities, which differ from RTVUs and conventional universities (Hao, 2017).

In an attempt to bridge promotion with recognition, China's open universities are exploring QF and credit bank systems in which credentials or recognition for different types of education and training could be accredited, accumulated, and transferred. As emphasized by the Ministry of Education, the open universities should promote the development of credit bank systems and establish a lifelong learning "lijiaoqiao" (pathway) by mutual recognition of learning outcomes and the accumulation and transfer of credits (MOE, 2012b, 2012c, 2012d, 2012f, 2012g).

The Open University of China (2017) has adopted the "levels + standard" credit bank construction approach in practice. It has established mutual recognition alliances with industry, companies, universities, and other open universities for promoting the accreditation, accumulation, and transfer of formal and informal learning outcomes. For example, the OUC works together with the China Society of Social Workers to facilitate the recognition of formal, non-formal, and informal learning outcomes for social work by

establishing standards of recognition of credits and rules of credit transfer. By the end of 2017, 70 learning outcome accreditation centers have been set up in 31 provinces and 21 industries across the country. Guangdong Open University (2017) developed a local qualifications framework using a standardized approach of service industry under the leadership of the governor of Guangdong Province. In March 2017, the *Guangdong Lifelong Education Qualification Framework Standard* (Guangdong Open University, 2017) was formally launched and became the first provincial level QF in the field of lifelong education, which was registered in the Standardization Administration of the People's Republic of China (SAC), an organization authorized by the State Council to exercise administrative responsibilities by undertaking unified management, supervision, and overall coordination of standardization works in China (Liu, 2018).

After five years of reform and development, the open universities have moved towards a new type of people's universities. Great changes have been made in relation to function, position, and provision of differentiated learning, social services, teaching and learning mode, OER, and the credit bank system.

Discussion

Achievements

From the 1950s to the present, RTVUs and OUs, in their varying forms, have played important roles in the economic and social development stages in China.

Under China's reforms, the RTVUs were the foundation of country's open and distance education system that morphed into the largest system in the world. The RTVUs made great contributions in facilitating access to learning for the masses and contributing to greater national development. From 1979 to 2009, the RTVUs had a total of 7.2 million graduates, representing 24% of the total number of higher education graduates during this time (CRTVU, 2010). Besides that, the RTVUs also provided programs of vocational education, community education, public officer training, and professional skill training for over 60 million people (Lu, 2014).

The open universities transformation should be considered a successful reform within the country's changing context. They are based on the need of the Chinese government to build strong human resources and a learning society in the 21st century. Open universities are unique in their ability to develop with the changes and trends of economic structural transformation, requirements of mass higher education, the aging population and the widening social gap, the development of ICT, and the educational reforms in China. For example, the OUC (2017) had about 3.6 million registered students in 2017, of which more than 70% students were from the grassroots level, with 55% located in the central and western ethnic minority border regions. Of the 2017 student population, 200,000 were rural students, 120,000 were military personnel, 270,000 were ethnic minority students, and 6,000 were disabled students. Second, the open universities meet the diverse learning needs of the Chinese people and promote human resource development. Third, the open universities provide the labor force with continued learning opportunities to advance skill acquisition and remain current with the ever-changing work environment. Fourth, the open universities enable disadvantaged groups to participate in quality learning opportunities. Finally, the open

universities facilitate the development of network-based learning, and create an open and flexible education system that makes learning for anyone, anyplace, and anytime possible.

The MOE (2018) commented that the six open universities made great progress in serving the national and local economic and social development, facilitating the deep integration of ICT with teaching and learning mode, enhancing the quality of professionals, and promoting the modern university system, and developing a credit bank system. The OUs are explorers of the reform on teaching and learning methods, providers of continuing education services, and promoters of the construction of a learning society and education fairness (Hao, 2017).

The reform of open universities in China has also been recognized internationally. The International Council for Open and Distance Education (ICDE) awarded the *Institutional Prize of Excellence* to the Open University of China, and praised it for its significant achievements and contributions to the international community of open and distance education. According to the Prize Nomination Speech, the OUC was excellent for the following reasons (ICDE, 2017):

- Its leading role and significant contribution to the development of China's open and distance education system – as well as its participation in the development of international open education.
- Its formation of a system of education where the learning model and curriculum are based on joint construction and sharing, cross-industry and cross-regional university, catering to rural and urban as well as overseas students.
- Its cooperation with other colleges and universities, vocational schools and social education institutions to establish a National Digital Learning Resources Centre.
- Its focus on the quality of learner development opening online learning spaces for tens of thousands of teachers and millions of students, with customized services for different group of people.
- Its ongoing formation of a "credit bank" system to promote the accreditation, accumulation and transfer of formal and informal learning outcomes.
- The initial formation of a non-degree education model that meets people's diverse and personalized requirements for lifelong learning.

Problems and Challenges

Notwithstanding the achievements above, the reform and development of open universities have also been facing problems and challenges in relation to the following four aspects.

Over-reliance on government policy. Both RTVUs and OUs are established by the Chinese government for solving the problem of economic and social development of the country during a specific period. On the one hand, it benefits from the support of government policy. On the other hand, it has indirectly caused policy reliance without the autonomy that conventional universities enjoy, and caused reform practices to be constrained. For example, the policy of establishing open universities and the 1+5 pilot transformation from RTVUs into OUs has greatly promoted the development of the CRTVU, and

especially the five local RTVUs. As Hao (2017) said, because of this policy, the local governments gave a lot of support to them, such as the increase of funding, infrastructure, and personnel. Compared with them, the 39 RTVUs outside of the pilot have much less support.

Contradiction between unification and diversification. The RTVUs uses a national unified operation model. From the central to the local government, a five-level operation system is adopted, including unified enrollment, unified discipline, unified curriculum, unified teaching materials, and uniform assessment (Ge, 2012). This model is helpful for strong control and standardization of teaching and learning, as well as training large numbers of people rapidly. However, for the open universities, with the diversification of local economic and social development, and the differentiation of demands, this model cannot meet localized needs.

Conflict between pilot reform and the existing education system. The open universities are committed to realizing open access and strict graduation, flexible schooling, and credit recognition and transfer, which create some conflicts with the current Chinese higher education enrollment and management system. For example, the length of schooling in the open universities has the same eight-year restriction as conventional universities do. This means that students in bachelor degree programs have to complete their study within eight years (Wang, 2017). Moreover, the issues of stakeholder cooperation, open and flexible platform, recognition of learning outcomes, and quality assurance may involve breakthroughs and innovations in the existing education system and mechanisms (Cui, 2018a).

Growing competitiveness in online education market. The open and distance learning institutions in China are now experiencing an unprecedented prosperous period while the market is increasingly competitive, which covers all education levels, attracts public and private sectors, and provides various scopes of services (Gaba & Li, 2015). According to ResearchInChina (2017), China's online education service industry has expanded around 20% in recent years, with the market worth of RMB 150.7 billion in 2016, which reflects a year-on-year growth of 23%. The number of users has also increased rapidly, reaching 89.27 million in the same period, a 21.9% rise from a year ago. Propelled by favourable policies and capital inflows, the Chinese online education service market and users would maintain a rapid growth rate, hitting an estimated RMB 421.6 billion with 241.6 million learners by 2021. Following the wave of MOOCs, the conventional universities in China have strived to develop open and distance learning in recent years. For example, in 2013, Tsinghua University and Peking University joined Edx, while Fudan University and Shanghai Jiaotong University joined Coursera. Furthermore, the top nine Chinese universities formed an alliance to offer "Chinese MOOCs," and enterprises – such as the Alibaba Group − have taken part in the co-creation of Chinese MOOCs. Several universities have launched their own MOOC platforms, such as "xuetangx.com" of Tsinghua University, with an independent construction and operating model. It shows that the online education market is getting more competitive. Prompted by the MOOCs boom, the MOE (2015) promulgated the *Opinions and Suggestions for Promoting the Construction, Application and Management of MOOCs*, which created favourable policy conditions for the orderly development of MOOCs. Therefore, with the conventional universities and enterprises widely joining in open and distance education, it is an urgent issue for open universities to explore their own position, advantages, and educational market.

New Issues

Key performance indicators for open universities. The MOE sets basic regulations on open university development. In the *Opinions of the Ministry of Education on Running Open Universities*, issued by the MOE in 2016, the guidelines, principle, objectives, and tasks on how to promote open universities were clarified. President Yuan of Shanghai Open University, however, stated that the key performance indicators and quality standards of the open universities were still not clear (Yuan, 2018). The determination of performance indicators and quality standards are critical for clarifying the positioning of OUs as a new type of university. In the period of RTVUs, because of the lack of clear indicators and quality standards of RTVUs, the quality of RTVU education followed the standards of conventional universities. This indirectly led to the homogenization of RTVUs and conventional universities, although they were two different types of higher education institutions.

Quality resource sharing between national OU and provincial ones. After the transformation from RTVUs, the provincial OUs gradually separated from the RTVU system and became independent. They are developing their own quality educational resources, digital learning environments, quality teaching staff, and online education platforms with functions of teaching, learning, management, research, and services. However, a sharing mechanism among the six open universities has not yet been established. There is an urgent need for open universities to collaborate and explore effective models to share knowledge, resources, and institutional talent, and make policies to avoid duplication for optimizing efficiency, cost-effectiveness, and social benefits.

Cohesion between national OU and provincial ones. Since the establishment of six open universities in 2012, the challenge of how to deal with the relationship between the national open university and provincial open universities persists (Chen et al., 2013; Hao, 2012; Xu, Wei, & Li, 2017). The unification during the period of RTVUs is difficult to adapt to and fully meet the current needs of the different provincial open universities. Yet at the same time, the overemphasis on separating and isolating from each other will also cause difficulties for realizing resource sharing for the Chinese open university system. How to achieve an effective mechanism to maintain the balance between the national open university and provincial open universities, and to build consensus, mutual benefits, and win-win results, is one of the key issues for the next step.

Quality assurance for awarding bearing programs. The Minister of MOE emphasizes that after the 19th CPC National Congress, the primary focus of higher education in China is to achieve high quality development (Sun, 2017). However, the six open universities point out in their self-evaluation reports that quality assurance and capacity building, including quality teachers, quality management, and quality curriculum design and development are their major problems (Beijing Open University, 2017; Guangdong Open University, 2017; Jiangsu Open University, 2017; Open University of China, 2017; Shanghai Open University, 2017; Yunnan Open University, 2017). Only 30% of teachers at OUs in China have postgraduate qualifications, and many of them lack professional development opportunities (Yang, 2014). Although the open universities have the right to independently award bachelor degrees, there is a considerable quality gap between open universities and top conventional universities in terms of faculty, subjects, and teaching quality (Hao, 2012).

Transforming the Remaining 39 Provincial RTVUs to OUs

For realizing the goal of "the open university system with Chinese characteristics in 2020" (MOE, 2016, p. 4), it is essential to explore the development of piloted open universities and remaining RTVUs. The RTVU has been a holistic system, involving one CRTVU, 44 provincial RTVUs, over 1,000 city-level colleges, and more than 3,000 county-level learning centers. Nowadays, the OUs are still regarded as a system, namely the "open university system with Chinese characteristics," operating under the MOE. However, after transforming six RTVUs to OUs in 2012, the MOE has not yet provided the explicit schedule and timeline for the transformation of the remaining 39 provincial RTVUs to OUs.

Implementations

Referring to the result of discussion above, some implementations for the future development of open universities are suggested as follows. First, the open universities need to establish regulations and charters to form a new open university system with Chinese characteristics. The capacity building of open universities needs to be strengthened in the area of quality assurance, staff development, use of advanced information and communication technology, educational collaboration, and innovation. Second, the national strategic development of open universities needs to be well-planned, including key performance indicators, assessment mechanisms, and structure of the new open university system, as well as the plan for the transformation of 39 RTVUs to OUs. Third, it is necessary to accelerate the process of building QF and credit transfer systems at the national level. Without unified national QF levels and standards, it will be difficult to achieve mutual recognition and credit transfer for all types of qualifications among different areas and levels (Zhang, 2014). Finally, the educational reform should be based on outcomes of research and practice. Great efforts should be made to conduct scientific research on open universities. It is necessary to do in-depth comparative studies, field studies, and applied studies focusing on several key research topics in open and distance education, such as inclusive education, evaluation, and quality assurance, the application of ICTs in education, and the curriculum design, as well as new issues on Internet+ education, leadership and innovation, OER and MOOCs, mobile learning, big data, and learning analytics (Zhang, 2017).

Conclusion

This paper presents the past and current development of open universities in China. During the transformation from RTVUs to open universities since 2012, some achievements have been made, while many challenges have been persistently emerging. The development of open universities in China has been entering the critical stage and many issues need to be explored through research and practice. It hoped that the outcome of this study could contribute to the literature on recent developments of open universities in China, as well as present developments and challenges that may be applicable to other countries that are building their own open and distance education systems to support greater institutional differentiation and enrolment growth.

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Rewriting a History of Open Universities: (Hi)stories of Distance Teachers

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Abstract

This article reports eight distance teachers' stories about teaching at two open universities over the past two decades with a focus on their perceptions and feelings about the changes in their teaching practice. This qualitative study employed a methodological approach called the autoethnographic interview, aiming to document more realistic histories of the open universities and to imagine a better future for those universities. As a result, the paper presents autobiographical narratives of distance teachers that dissent from the general historical accounts of open universities. These narratives are categorized into three interrelated themes: a) openness: excessive openness and a lost sense of mission; b) technological innovation: moving online and long-lasting resistance, and c) teaching: transactional interactions and feelings of loneliness. The paper then presents a discussion of useful implications for open universities, which can serve as a starting point for more meaningful discussions among distance educators in a time of change.

Keywords: history, open university, distance education, distance teacher, autoethnographic interview

Introduction

This article reports lived histories of open universities—the stories of distance teachers who have actually lived through the history of their open university. The aim is to offer a more sophisticated understanding of the current development of open universities, and to imagine a better future for open universities. Open universities have played an essential role in making university-level education more accessible to the general public, by removing various physical, financial, and educational barriers to university entrance (Lee, 2017). Over the decade following the birth of the Open University of the United Kingdom (UKOU) in 1969, 20 open universities were established around the globe (Peters, 2008). Since then, those open universities have strived to meet the needs of underserved students, often adults with multiple social responsibilities and/or under disadvantaged circumstances. Up to now, as a result, a huge number of adult students have earned their university degree(s) from the open universities as part-time distance students.

In more recent times, a growing number of higher education institutions, including campus-based universities, have offered distance education (DE) programmes targeting part-time students. Yet, there has been a rapid decrease in a number of part-time students overall (Callender & Thompson, 2018). In the context of heightened competition, many open universities, including the UKOU, have been exposed to multiple challenges seen as threatening their survival (Coates, 2017). The situation of the UKOU, in particular, has made a large number of distance educators worried, since its unique mission of making university education open to all is still perceived as valuable and important (Tait, 2008). In fact, issues of educational inequality strongly persist in current higher education contexts around the globe (Black, 2013).

In this context, distance educators have focused on identifying different factors causing the recent financial crises faced by open universities, while romanticizing the past achievements of open universities and feeling nostalgic about the old days (see Harris, 2018). However, such an approach does not provide a comprehensive understanding of the historical development of today's crises. Therefore, this paper looks at the past and the present of open universities together more critically. This work is by no means the first attempt to look at the history of open universities: there has been a good number of published works on the topic (e.g., Haughey, 2010). Nevertheless, what makes this work distinct from those previous ones is that it tells different stories of open universities using distance teachers' actual voices, which have not been taken seriously in previous literature. Consequently, it rewrites the general history of open universities that has been more commonly told until now.

Many general historical accounts of the development of open universities start from the original purpose of DE, that is, opening the door of HE, and then trace their achievements in that regard. These achievements are sometimes also placed in the broader context of the advancement of the technological tools mediating teaching and learning activities (Pittman, 2013). A number of academic narratives have reported a dramatic instructional transition from paper-based DE to online DE as an important milestone in the history of many open universities (Davis, 2001). The temporal division between traditional DE and online DE has become commonly used by many distance educators as a useful set of markers conceptualizing the history of open universities. Most previous authors, however, seem to take an unbalanced position toward the two, regarding online DE as a more innovative way of doing DE, one which is far superior to traditional paper-based DE (Bates, 2008).

While both narratives, namely opening the door of HE and moving DE online, provide interesting stories about open universities, reading them does not provide a realistic sense of what has been happening in real-life DE contexts over the past decades. This paper, therefore, argues that an one-directional view of history (one that assumes every society is progressing from worse to better) does not provide a useful ground for understanding the current crises. This article also argues that stories of distance teachers, who have lived both the past and the present of their open university, can potentially be more informative than those more general (often, abstract and impersonal) accounts. This article, then, has a rather obvious, but nonetheless unusual, starting point when it comes to the task of writing a past, a present, and a future of open universities: distance teachers' stories. The following section will provide a brief definition of the concept of history used in this article.

A Conceptual Approach

In this article, the author follows Southgate's (2009) conceptual understanding of history as fictional truth. Histories are stories that we tell (and are told) about the past. Theoretically and ideally, those stories are based on reliable evidence deriving from the past, and aspire to "truth" through their correspondence with what actually happened; but in terms of practical reality, insuperable problems arise to negate that possibility. First, any supposed "facts" are themselves questionable as having been taken from inevitably partial (however "primary") sources; second the incorporation or "emplotment" of those building blocks into a narrative is constrained by the cultural forms currently available and by the necessarily subjective input of individual historians – their choices, selections, purposes, and ideological positioning. (Southgate, 2009, p. 195)

Despite his critical position towards the possibility of attaining ultimate truth in any single story, Southgate's definition of history does not shut down the possibility of aspiring to higher credibility for the fictional truth. That is, this conceptual approach allows and encourages distance educators to invite and value multiple stories, each attaining some reliable facts and some elements of truthfulness, within a process that might build a more credible story of the past and the present of open universities. Given that everyone can be a historian to a certain extent, when it comes to the moments of telling about their past and compositing their personal (hi)stories, this article focuses on collecting distance teachers' own fictional truth of the past and present of their open universities.

A Methodological Approach

In this qualitative study, eight distance teachers—four from Athabasca University (AU) in Canada and four from Korean National Open University (KNOU) in South Korea—took part in a two- or three-hour semi-structured interview. A purposeful sampling method was used to select the eight interview participants, prioritizing the selection of informants who were expected to be "information rich" (Patton, 1999, p. 169). Two DE researchers working at the target open universities supported the study and acted as gatekeepers. Each recommended four academics who would know the university history the best (and who, in their view, would have something interesting to say). All suggested academics had been teaching at the university for 20 years or longer, and they had all also been an active member of the

institutional leadership team at different times in their university's history. The author sent an e-mail invitation to each of the eight academics and all accepted the invitation.

Research Sites

AU, established in Alberta, Canada in 1970, offered its first correspondence study course, *World Ecology*, in 1973, and achieved self-governing status as Alberta's fourth public university in 1978. It created unique models for course production (i.e., course team structures), course delivery (i.e., self-paced study models), and student support (i.e., telephone tutorials), and also put significant effort into improving the quality of DE by using technological media. AU pioneered the use of computers to deliver online courses: AU's online Executive MBA program was introduced in 1994. Since its founding, 265,000 students have registered at AU and, today, it serves over 40,000 students worldwide (Athabasca University [AU], 2019). A recent review report (Coates, 2017), however, argues that AU needs to make significant changes in its operational and pedagogical models if the institution is even to be sustained.

KNOU was established in 1972, originally as an affiliate of Seoul National University (SNU), offering two-year college-level programs. The first five-year bachelor's program was accredited in 1981 and KNOU was formally separated from SNU in 1982. It launched television programmes in 1985 and radio programmes in 1990: since KNOU TV (OUN) was launched in 1996, KNOU has strived to improve the quality of national lifelong education by broadcasting its lectures across the country. It first adopted an Internet-based DE system in 1996. As of 2018, 607,799 students have graduated from KNOU and it has more than 130,000 students in current enrolment. KNOU (2017) has also experienced a rapid decline in its student numbers to the extent that its financial model is being seriously questioned: for example, the number of students enrolled decreased from 72,183 in 2010 to 46,946 in 2017, a reduction of 35% (KNOU, 2019).

Autoethnographic Interview Method

In order to collect the personal stories of those distance teachers—the fictional truth of open universities—the author employed an autoethnographic interview technique. The term autoethnographic interview in this article refers to a specific interview technique informed by the methodological principles of autoethnography. Autoethnography is a qualitative research attempt to collect stories of/about the self, in order to understand the shared aspects of general culture embedded and represented in those personal stories (Chang, 2008). Autoethnography, which positions the self at the centre of research, allows researchers (and participants) to articulate their own personal experiences, and to access complex inner thoughts and emotions relevant to those experiences (Ellis, 2007). By using autobiographical stories and self-reflections on those stories as main data sources, autoethnography explores connections between those personal stories and their wider social meanings and, thus, strives to develop more comprehensive understandings of social phenomena (Adams, Holman Jones, & Ellis, 2015).

In this qualitative study, it was necessary to choose the autoethnographic interview method, rather than other forms of interview, because it empowers interview participants not only to tell their autobiographical stories but also, firstly, to explore their inner thoughts and emotions related to the stories and, secondly, to further analyse the social meanings of their stories. From the author's perspective, therefore, the eight distance teachers were not a passive source of data, but active

composers and owners of the data, whose own reflections directly informed the research outcomes. Based on the theoretical belief that histories are stories constructed by individual historians' subjective selections and ideological positioning (Southgate, 2009), the author conceptualized autoethnographic interviews as a dialogic process involving co-constructing histories of open universities with the distance teachers. All interviewees were experienced distance educators, highly knowledgeable and perceptive about the past and the present of their open university—although their voices were not commonly listened to by contemporary distance or online educators.

Following Chang's (2008) ethnographic interview technique, the author started each interview with grand tour questions in a casual, conversational manner. The author printed out a short passage excerpted from the university's mission statement, with which all participants were already familiar. Then, the author asked general questions such as "what do you think about the passage?" and "how do you understand the meanings of the highlighted words in the passage (e.g., barriers, success, excellence)?" After the simple text analysis exercise, the conversations moved onto the self, with questions such as: "how and why did you end up being here at (open university)?" and "could you please share your stories of teaching at (open university) with me?" With most interviewees, this grand tour section of the interview took about an hour to complete.

From responses to grand tour questions, some more specific mini-tour questions were "spontaneously and methodically derived" and asked (Chang, 2008, p. 105). Here, the author explored participants' inner thoughts and emotions about their stories. This dialogic exploration with participants was facilitated by both spontaneously emerging questions and by prepared questions, such as: (a) "how did you feel when you were first asked to teach online?" and "how do you feel now?"; (b) "how was working with other members of the course team?"; and (c) "what are you most and least satisfied with your current courses?" The final part of the interviews focused on drawing out more self-reflective narratives from the participants, guided by many why-type questions such as "please think back to your response to the last few questions: why do you think you are teaching and feeling in the ways you described?" Towards the end of the interviews, the author also openly shared other views and stories, including her own, with each interviewee to facilitate more critical discussions.

To make the conversations as comfortable as possible, the author visited both universities to have face-to-face conversations, and allowed each interviewee to choose a space most convenient and comfortable. The interviews were conducted at various places, including a living room, office, café, and meeting room. During each interview, the author carefully used autoethnographic data analysis strategies such as: (a) searching for recurring topics, themes, and patterns; (b) connecting the present with the past; (c) analysing relationships between self and others; and (d) contextualizing personal experiences broadly (Chang, 2008, p. 131). The author's attempt to collect and analyse the autobiographic data simultaneously, and to do so in collaboration with the providers of the data, was particularly effective in this project, resulting in very rich interview outcomes, both intellectually and emotionally.

All audio-recoded interview files were transcribed. The transcribed text was broken down as a series of meaningful units of analysis (i.e., sentences, paragraphs). The initial open coding was conducted by highlighting meaningful phrases on the printed transcripts and making notes in the margins of the transcripts of the potential categories emerging from the highlighted parts. Next, a second round of reading was undertaken to develop the open coding results further and to find relevant links and

relationships among the identified codes. Here, the codes were more carefully examined and compared with/against each other, and further conceptualized as independent categories by using the chronological order and the temporal division between the past and the present of open universities as organizing principles. This axial coding exercise was assisted by using Microsoft Excel.

The author shared the categories with the interviewees for the purpose of member-checking and collected additional thoughts from them via e-mail. The final round of reading was undertaken by moving back and forth between the original interview transcripts and the Excel sheets. Three themes were drawn from the categories as a result of a selective coding process. The author wrote a draft of this article and invited one of her colleagues to act as a critical friend, whose role was to read and provide comprehensive feedback on the claims made by the author, thereby enhancing the trustworthiness of the research outcomes (Lincoln & Guba, 1985). The following section presents the main findings from the eight autoethnographic interviews. It includes a considerable volume of direct quotes from their interviews to present teachers' authentic voices in a manner distorted as little as possible by the author's arbitrary reinterpretation.

Findings

It is important to stress that there are some variations in the eight teachers' stories; their perceptions about the past and the present of their university should not be understood, by any means, as homogenous. While making marginalized, but important, voices heard, the significant discrepancies among those voices will be highlighted to provide readers with a more accurate representation of the stories.

Openness: Excessive Openness and a Lost Sense of Mission

To begin with, all eight teachers emphasized the extent of their pride in their university's original mission of being open to the underserved. Indeed, that mission seems deeply engraved on their minds. For example, Dan said, upon seeing the excerpt from the AU's mission statement:

> I've been with this university for 20 years and I really do have strong feelings about the mission, I mean, the social mandate in that. It's one of the things I like about working in this place that you feel like you are making a difference for students, that you imagine yourself working with people who have been up against barriers, and now you are at institution that is a little bit different so it's going to help them along. So, I have very positive feelings and then kind of have incorporated it into my own life.

Similarly, Eva suggested:

> I think it reasonably describes what we all inspire (sic) to at the university. I've been at this university for 20 years and we always talk about that mission. It's the foundation of every single discussion we have as a group. We know we don't always meet that ideal. But, I believe that anybody who's been at the university for any length of time is actually proud of that statement. We actually work at AU because we believe that to be a good thing to aspire to.

Kim also stressed that the original purpose of establishing the KNOU was to provide "educational opportunities for all citizens including those with lower social-economic status." Moon emphasized that the KNOU, since its establishment, has made a significant impact on the lives of numerous middle-aged women whose parents, in the patriarchal Korean society of the 1960s and 70s, had never given them any opportunities to study. All interviewees shared various stories about how they and their university have successfully supported students who have disadvantaged backgrounds. In fact, most interviewees purposely chose to join the open university, influenced by the fact that its mandate aligned with their personal and political beliefs. Tom, who was on the original committee that constructed AU's mission statement, for example, mentioned that when he joined AU in the early 1980s:

> I was interested in making sure that people who never had the opportunity to do post-secondary education would be brought in for the first time—that includes prisoners. I taught at AU in the prison system for a while with maximum security ... it also includes First Nations. It would include women since historically women never had equal educational opportunities.

In the past, several teachers from both universities reflected the concept of being open was much simpler and more straightforward. However, some state that moving online or "doing 100% online" (Moon) has changed that situation, introducing different barriers to achieving openness. Tom continued:

> How are we doing all those things? We've given up on the prison's program . . . We used to share the cost with the federal government, we would provide all the course materials and they would provide the money to put an instructor. There is no government funding for prisons and AU do not produce printed course materials anymore. We do everything online but we have to have real instructors in class because the prisons may not allow prisoners to go onto computers, definitely not onto the Internet. So, we've given up.

One shared theme about the more recent situation in their open university is that "everyone talks about openness, but no one seems to be really bothered" (Cho). While terms such as open education, open courses, and open resources have gained popularity in the public domain, interviewees have noticed that the general public have gradually accepted DE as normal educational practice. Since the status of open universities has shifted from being an outlier HE institution towards being more normal, they no longer have to struggle to justify their existence: "it seems like everyone suddenly knows who we are!" (Bill). In addition, moving online, which is often equated in common discourse with being open by its very nature, has contributed to a growing sense of openness being taken for granted. Yet, this situation has its consequences. As Cho and Eva each said:

> In the old days, we used to have lots of conversations about our identity. How are we different from other universities? Who are we serving? How can we serve them better? Many of us came out for drinks and enjoyed those serious debates. But now, it does not seem to happen anymore. We just know we are an open university. (Cho)

> The people who started this university purposely went out to find every radical thinker they could find . . . a bunch of rebels. They are my age or older, they are on the way out, but they are the people who put this university together and that ethos about looking after every man, being the ordinary person's university, going overboard for service for students. All those things are very

> precious to people who have been here. I think that is still really important to us ideologically but on a pragmatic level as more and more traditional universities get into [DE] . . . it is maybe not necessarily going to be as important as it has been in the past. (Eva)

Tom, given that there is still a large number of the underserved students remaining in Canada, concluded:

> We have continued to try to fulfil the mandate, but I am sure we are failing in certain ways . . . because our course fees are going up. Across the country, that means the working class and the poor can have less and less opportunity.

Such a conclusion clearly challenges the developmental view of the history of open university and open education more generally.

Technological Innovation: Moving Online and Long-Lasting Resistance

When it comes to the term "innovation," the eight teachers' stories of the past are divided very strongly. Half of the teachers have been pushing the adoption of online technologies and subsequent changes in institutional practices, while the rest have been (and to some extent are still) resisting the pedagogical changes introduced by these new forms of DE. First, there is Eva, a professor teaching a programme with a relatively "heavy media focus" in the social sciences. She said:

> In 1996, I needed to use the Internet. And people were very, very resistant even to something like a discussion group, because they felt some students didn't have computers and that was quite right. A lot of students didn't . . . so, we've always allowed students to push us. So, as soon as we had enough students saying "I'd like to have a discussion board," then we would lumber into movement and get a discussion board ... but the university now has to jump over several phases of technological innovation to catch up. So, we are in a catch-up mode now, or always, rather than being ahead.

Her narrative clearly highlights the challenging nature of putting cutting-edge technologies in place without threatening the openness of established DE practices at open universities. Dan also shared his stories about leading a series of funded initiatives to move DE online began in 2001.

> I think it was almost like house cleaning because a part of problem that I found was the people who were doing the print-based telephone tutoring . . . when you talk to them and say "let's be innovative" then, they already think they are innovative because they were innovative for the 80s and 90s. Although people agreed, they had different ideas of what online was, what online discussions were. People said, "That's not my job. I'd write a course and if they want to put it online, I will hand it over to whoever it is, they would make it online but that's not why I am here." So, to have people not just having their courses online but actually being tutors in an online teaching environment was very difficult. So, it was a people problem, technology was easy.

There are similar stories from the KNOU. Cho and Kim are the two who have been striving to introduce new technologies to their university. Cho says "it is also our responsibility and mission as a DE institution to use the most cutting-edge technologies for our educational practices. We need to make our education more effective." Kim reflected on a challenging time he had when he and a few others

developed and introduced a digital library system in the mid-2000s, facing severe criticism from other members of the university for wasting budget—although the system was perceived as revolutionary in the general HE context. When interviewed, Kim still felt anger towards some of those opponents:

> [Developing the digital library] we were the first in the world . . . in the world! After that, we had a university awayday . . . We were in the people's court. All of those faculty members, since they did not know anything about the digital library, fired off questions one after another to us. All of those questions were very negative and criticizing, since we spent the big budget. It was like a witch-hunt. It may be because we failed to have effective communications with other teachers. But, pioneers are always in such pain, facing the same dilemma. It takes too long to enlighten everyone and then, we lag behind . . . we are just hated.

These four pioneers tend to have a set of strong beliefs about technological innovation, namely that: a) using new technologies will improve the quality of learners' experiences, b) as a DE institution, it is part of the university's mission to lead technological innovations in education, and thus c) technological innovation is not a choice but a mandate.

While the innovators' stories are mainly concerned with general student perceptions and institutional reputations, the stories of resisters tend to be far more specific and deeply grounded in their own pedagogical beliefs and experiences. Bill, for example, avoided defining the term innovation by saying "of course, you can innovate but it depends what you are innovating for." Then, he continued:

> I've been doing [online DE] now I think since 2002. And my general impression up to this point has been that it's very . . . it's inadequate for number of reasons. I think it is 2002 or 2003. The only reason why I started my course online was because we had course development frozen, but there were funds for online course development. So, I agreed to have my course developed online. It was an enormous struggle trying to figure out how to move.

Bill expressed the belief that some of the technological and pedagogical features that are offered (or imposed) by the specific online course platform, do not work for him and his students. He does not believe that students enjoy reading online because most of them simply print out the electronic materials. He adds that "the difference is, in the old days, we provided them with the print version but today, they have to pay themselves to print it off with inks and cartridges."

In the case of KNOU, its institutional decision to move from television-based DE to online DE was finally made in 2009: by then, the Internet had become a very common technology in South Korea and most students had Internet access at home. Both Won and Moon had previously been fighting against adopting online DE. However, by 2007 and 2008, they also realized that a number of newly established cyber universities were already providing online courses and successfully attracting many students, and that there were lots of students even in their own courses who wanted to do online DE. An interesting point here is that unlike the case of AU, since KNOU made its move—*from* television lectures with printed textbooks *to* online lectures with Web-based textbooks—there has been no serious resistance to doing things online. As Won, one of the original opponents to adopting online technologies, put it:

> It is the same: watching lectures on television and watching lecture on the Internet. We do the same as well. We write our lecture notes and record our lectures in the broadcasting studio and

> someone puts them online. I think it is good to have an online discussion board, so students can ask questions anytime they want. Our students like to study alone so no one asks any questions anyway. Nevertheless, it is good to give them opportunities.

However, a key question remains: to what extent has adopting online technologies actually innovated pedagogical practices? Such a question effectively challenges some of the taken-for-granted assumptions about how pedagogical innovation is led by technological innovation.

Teaching: Transactional Interactions and Feelings of Loneliness

All eight distance teachers said they feel the most fulfilled when they have personal/personalized interactions with students. One important pedagogical feature of KNOU, which distinguishes it from AU, is that most courses offer at least one face-to-face tutorial. The university has 13 regional colleges, which cover all of the residential areas in South Korea (a relatively small country compared to Canada). Each teacher visits those regional colleges over the course period to meet their students in person, which has been highly appreciated by both teachers and students as an innovative means to complement the perceived limitations of DE. Consequently, most of the meaningful teaching stories from the KNOU concern meeting students in person.

On the other hand, most of the courses at AU are fully online. Thus, the stories from AU are somewhat different in nature. As Dan said, early on:

> I am hoping that some of my own personality comes through the courses and they are set up in the way that students will learn well. I've got good feedback from students and so I think I've been as effective as I could be with what I have. Like anyone who teaches, when you are working with students and they finally get something, they understand it and you get that sense . . . it's better than any other awards. You feel like you made it. Every once in a while, I run into the old students and "you were my professor and I remember you did that." AU students are everywhere. If I go to the airport and I have my AU luggage tag and go through the security and then "oh, you are from AU. I took a course there." So personal connection and feeling that you made a difference . . . just like any other teacher.

All interviewees were very clear about the distinctive characteristics of their students and the pedagogical restrictions caused by the open nature of their universities, which often allows students "unprepared for the university level of education" (Dan) to enter the university. Reflecting such pedagogical conditions, a rather altruistic attitude to teaching comes out very strongly from the interviewees' comments. For example, Tom said:

> The first thing is to get to know the student as a "person" as best you can . . . some students are struggling, they have to struggle to get the time, they are single mothers with children and earning for a living. And sometimes, they need some recognition from us just how hard it is to become a student and to fulfil those requirements ... and sometimes, it's difficult because one hand, I have to maintain a standard. If I receive a paper, which isn't written well, which has grammatical and compositional problems, it's my job to show that the student has problems but can overcome those problems. It's my job to show the student how to fulfil themselves to move beyond . . . in order to really begin the teaching process, there is a point of contact where you have to recognize

> another human being on the other end of the relationship. With me, the best way is through a telephone call . . . I try to deal with students individually as a human to see what their resources are, what their experiences are, how they can use the experiences to fulfil the requirements in the course.

Tom expressed an awareness that the university, and many of his colleagues nowadays, believe that his teaching approach, which was appreciated in the early years of the institution, has become regarded as extremely inefficient and too costly. He has been asked to replace telephone tutoring with e-mail communication, which, to him, is not at all relational or dialogical but rather transactional and impersonal. His story has a sad ending: "loneliness . . . I am square peg in a round hole. That's how I've felt at AU. But it's true."

Bill also stated a preference for telephone tutoring over other ways of communicating with students even though the student group that he tends to "phone up" seems different from that described by Tom:

> I have students who read materials and ask me questions that I am struggling to answer because they get into the part of the text that I don't cover . . . to respond to that student, I need some kind of immediate contact because it takes a while to figure out why this student is interested in this section . . . I have a number of students who do that like top 10% and it's such a pleasure actually it's what makes teaching really, really exciting and I had students I corresponded with and I am still corresponding with some of them after the course. They still say that my teaching changed their life.

Tom and Bill provided similar opinions about the nature of communication mediated by different Web-based communication tools, such as e-mail, stating that it tends to be transactional. They suggested that students' e-mails include only brief information-seeking questions, and that meaningful dialogue rarely emerges via e-mail communications. Regarding Web-conferencing, Tom pointed out that "I don't mind, but I am not sure how that is different from phoning-up. That is still one-to-one exchange. Costly . . . so university hates it. Telephone is so much [more] convenient anyway." Bill also says "the [Internet] connection is often bad. Phone voice is much clearer." Most of the interviewees stated their belief that facilitating group discussions in online courses with a large number of students is unrealistic, especially since many of their students do not have a good level of academic literacy.

These shared voices indicate that a) the participation rate for online discussion is very low, b) student postings foreground surface knowledge rather than deeper thoughts, and c) facilitation is too costly, if it is possible at all. Tom said:

> Sometimes learning designers want me to put in chat rooms or conference sites, then my response is I don't have the time to monitor posts that students put up . . . because there are three written assignments in this course and if I got 30 students in this course, I am gonna be busy just to mark their written assignments, answering phone calls, answering e-mails, and you want me really to coordinate the conference site or chat room? Plus, most students, if they don't have to go on the chat room, if there is no grade given, they wouldn't be bothered. They are not in it for socialization. Learning designers don't like me because I am not enthusiastic about all those stuffs, but I still am unenthusiastic about it.

In addition, Bill suggested that the nature of humanities requires students to take time to read and think, rather than talking and discussing. He added that "the logical thinking and deep philosophical reasoning is an individual task."

Discussion

The preceding section presented the intertwined voices of distance teachers, raising two important points to discuss further. First, there is a significant gap between general historical claims about online DE and the autobiographic narratives of distance teachers. Contrary to common belief about the increased openness in online DE contexts, the distance teachers in this study have felt a decreased sense of openness in their everyday practices. Our collaborative interpretation (i.e., the result of the autoethnographic interviews), is that in the midst of an excessive rhetoric of openness, the open universities have lost, or at least obscured, their original mission of serving the underserved. It is not merely the open universities' wrong-doings but rather a mixture of internal and external factors that has shifted the original focus of the institutions. External factors identified during the interviews include (a) decreased government and public funding for open universities, (b) increased competition among DE providers, and (c) more general changes in the climate of HE—which is often conceptualized as subject to neoliberal movements (Giroux, 2014).

The interview results suggest that the most important task for open universities, in this time of uncertainty, is to start serious conversations about their mission and direction. Making the institutional focus clearer—possibly by retracing the earlier focus on openness—can facilitate those conversations and provide a practical ground for possible actions to address the current crises. Such conversations will also protect individual distance educators from being misled by rhetorical claims about openness. When it comes to DE research, there is a shared sensed of urgency about developing realistic understandings of the contemporary underserved that have been (or need to be) served by open universities, and the extent to which open universities have effectively served their particular students, who may not be well-prepared for university-level study. These are empirical matters that needs to be investigated—for example, by looking at real-life experiences of specific groups of underserved students. Doing so will demand considerable commitment from DE researchers (Lee, 2017).

Second, there is long-lasting tension related to technological innovation between devotees and opponents in open universities. The study shows that the way in which open universities have adopted online DE has caused a strong sense of bitterness in both groups. Innovation has been tightly bound by ideas of accessibility and affordability, and so has never been free from scrutiny about its necessity. In the pre-Internet era, the idea of adopting new technologies was organically connected to, and therefore supported by, the purposes of making DE more accessible (Lee, under review). However, the idea of adopting online technologies, from its outset, has been severely criticized by those opponents who perceive online DE as neither accessible nor affordable. In such a hostile atmosphere, meaningful pedagogical discussions on how to teach online were not facilitated. Only later, when reaching an apparent breaking-point as a result of online becoming necessary, was online DE pushed by fear of falling behind other competitors. That, in turn, created the common sense of technological imperative in open universities.

This study suggests that the lack of meaningful conversation has led to a failure to achieve the kind of technological innovation its advocates argue is needed to bring pedagogical innovations into open universities. In the current online DE era, is it too late to start the conversation and look into the old tensions again? This article argues that it is not. Perhaps this moment of crisis is the right time to bring distance teachers and their real-life stories into the foreground of academic discussions on the future of DE and open universities, rather than imposing abstract and theoretical ideals of online DE upon them (Lee, 2018). Distance teachers, like other teachers, value meaningful connections with their students and they are actually on the front line, interacting with distance students and supporting their learning. In that sense, it is rather disappointing that the actual voices of distance teachers have rarely been emphasized within DE research.

Therefore, one legitimate starting point for imagining the sustainable future of open universities may be to talk to different groups of distance teachers—not only those who are seemingly doing well but also those who are struggling. The moment calls for a collaborative re-imagination of the future of DE—focusing on how to support distance teaching in a more practical and specific sense.

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The Historical Development and Adaptation of Open Universities in Turkish Context: Case of Anadolu University as a Giga University

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Abstract

Open and Distance Learning (ODL) has a long history, one marked by the emergence of open universities, which was a critical development in the ecology of openness. Open universities have taken on significant local and global roles within the framework of meeting the needs of their respective regions of influence, and as such, their roles have evolved over time. Against this background, the purpose of this research is to explore the open university phenomenon by examining the case of Anadolu University in Turkey, a mega university that has transformed into what is now a *giga* university. More specifically, the research first looks at openness in education and how the concept itself has led to the emergence of open universities, before turning attention to Anadolu University, which is a dual-mode, state university with around 3 million enrolled students. Other issues that are addressed as part of this research include the rise of ODL and how it positioned itself within Turkish higher education; the historical development of Anadolu University and its massiveness, in terms of student numbers and services provided; local and global ODL practices; learner profiles, learning materials and spaces; exams and assessment and evaluation processes; learner support services, and Anadolu University's contribution, as an open university, to the field of ODL. The research shows that as an open university, Anadolu University has narrowed the information gap and digital divide, has enhanced equality of opportunity in education, and has provided lifelong learning opportunities. More importantly, as an institution that has gone beyond the conventional understanding of an open university, Anadolu University serves as a catalyst of change and innovation in its emergence as a role model for other higher education institutions. The following recommendations were able to be developed from the examinations of this study: (1) develop a definition of "openness" based on the changing paradigms of the 21st century and online learning, (2) enter into national and international collaborations between open universities, (3) adopt culturally relevant open pedagogies, (4) develop and design heutagogy-based curricula, and (5) unbundle ODL services in mega and giga universities.

Keywords: open university, open and distance learning, distance education, Turkey, Anadolu University

Introduction

According to the visions and missions at the heart of the openness philosophy, open universities are rooted in the idea that education is a basic human right, that teaching and learning need to be democratized, that equity in education needs to be facilitated, and social justice improved. Though being perceived with great skepticism at first, over time, open universities have proved legitimacy, growing into mega and giga universities, and are now considered a part of mainstream education. While open universities have served to support universal values, the models and the way they adapt to change can differ depending on the specific society or region in which they operate. In this regard, this paper looks at open universities within the Turkish context by examining the case of Anadolu University, its historical development in the Turkish educational system and its appearance first as a mega university and then as a giga university.

Openness in Education and the Emergence of Open Universities

Openness in education is more than an approach; rather, it is a philosophy with multiple roots, faces, and names, which views knowledge as a public good, upholds the need for equity in education, and has universal values as its core. As a philosophy, it has influenced how education is formed and delivered, and its roots can be traced back to the early period of human history. However, despite its long history, there has never been a precise definition provided on what openness in education means.

> Historically, the term openness resists formal definition. The concepts underpinning the term can be very fluid in meaning and often only make sense when situated within a given context. Further, its use can become very ideological and political. The term open invokes in many an instant recognition of certain concepts and vague notions of certain values but becomes slippery and even dangerous when attempts are made to establish a common definition or to narrow the term's field of use. Efforts to define openness have often, although not exclusively, taken one or some combination of three general approaches. These include grounding openness in historical accounts of related movements and events; philosophically or conceptually seating openness as the underpinning ideal of a given context; and operationally negotiating openness in practical contexts. (Baker, 2017, p. 130)

In related literature, it can be seen that openness in education has been defined under numerous forms, including open learning, open teaching, open education, open source software, open access, open educational resources, open educational practices, open scholarship, OpenCourseWare, and massive open online courses, all of which are some of the more commonly mentioned forms; yet, the idea of openness is not limited to these concepts alone (Peter & Deimann, 2013; Peters, 2008; Smith & Seward, 2017; Pomerantz & Peek, 2016; Tait, 2018a). The related literature also shows that openness is not a fixed term but rather, a term that has had many interpretations, which have changed over the course of time and in different territories (Bozkurt, 2019; Harris, 1987; Hug, 2017). In the case of Turkey, openness in education can be defined as easy access to educational opportunities, with multiple entry points, no or low monetary costs, flexible learning processes, and where the focus is on independence in time and place.

Openness in education actually existed long before teaching and learning became comprehensively institutionalized (Bozkurt, Koseoglu, & Singh, 2019; Peter & Deimann, 2013; Peters, 2008), having emerged as an organized form of learning, through certain visionary efforts, following educational developments in the 1700s and 1800s (Simonson, Smaldino, Albright, & Zvacek, 2011; Verduin & Clark,

1991). Over the long history of openness in education, the Open University of United Kingdom (OUUK) qualifies as the best-known example of an open university to have adopted an institutionalized system view and to present certain ideological roots of openness. The foundation of OUUK served to inspire, as a model to adopt, many other higher education institutions across the world.

Open universities have evolved over the course of different generations. In the first generation, education was delivered in the form of correspondence; in the second generation, education was included the use of broadcast radio and television; in the third generation, education was offered through the creation of open universities; in the fourth generation, teleconferencing was incorporated into education; and finally, in the fifth and current generation, the Internet and Web are prominent and important considerations for the delivery of education (Moore & Kearsley, 2012). Further examination of these developments shows that while the third generation represents a system view, the other generations originated from advancements in information and communication technologies (ICT). It soon became apparent that there was a need to address certain critical factors associated with the emergence of open universities. For instance, once open and distance education became a part of mainstream education, new organizational policies and strategies for delivering educational content to learners, who were separated from instructors in time and space, were required. Along with the advancements in educational technologies, experimental studies that were conducted at the time shaped the educational perspectives (pedagogy, andragogy, and heutagogy) that eventually led to the emergence of open universities.

Open Universities

The ideas governing open learning and open universities are inspired by critical pedagogy (Peters, 2008) and have served to mitigate race-based inequalities, social and economic inequalities (Taylor, 1990), and language and cultural barriers (Van den Branden & Lambert, 1999). Moreover, these ideas have further served to increase the democratization of education and the redistribution of wealth (Taylor, 1990) and to facilitate social justice (Rumble, 2007; Tait, 2008, 2013).

In addition to the above benefits, open universities can be regarded as an innovation in higher education (Shale, 1997) and as a change agent, insofar as they introduced the manner in which innovation can be integrated into learning processes (Van den Branden & Lambert, 1999). In this context, it can be suggested that ICT and educational technologies have had critical roles and been pivotal drivers (Smith, 2005) for open universities in delivering an effective and efficient learning process and in “overcoming social inequity and the tyranny of distance” (Latchem, Abdullah, & Xingfu, 1999, p. 103). However, it is also important to note that, although the above-mentioned functions of open universities are salient, the roles and purposes of open universities have changed in line with paradigm shifts, and “what remains constant is the development function” (Tait, 2008, p. 93); therefore, it would be helpful to “define the purposes of an open university in this way” (Tait, 2008, p. 93).

Purpose of the Research and Methodology

Based on the above stated information, the purpose of this study is to discuss the development of open universities from the perspective of Turkey, focusing specifically on the case of Anadolu University. In

doing this, the study intends to contribute to the existing literature and to gain a better understanding of the world of open universities, which is complex in nature and operates differently according to the changing needs of the societies across the world.

To achieve this stated purpose, the study adopted a traditional literature review methodology, an approach generally used to reinterpret, interconnect (Baumeister & Leary, 1997), summarize, synthesize, draw conclusions, identify research gaps on scattered pieces of knowledge, and provide suggestions for future research directions (Cronin, Ryan, & Coughlan, 2008). The data were collected via document analysis (Bowen, 2009), aided in part by content analysis (Berelson, 1952), to attain synthesis of research on one of the open universities: Anadolu University.

Limitations

This study presents up-to-date information about a unique open university case, Anadolu University, with the hope of contributing to the related literature. However, the study did have some limitations. First, the results of the study provide an in-depth understanding of only one open university and therefore cannot be generalizable. Second, the researcher is currently a member of Anadolu University, which possibly makes his interpretations fail, to a certain extent, to satisfy the objectivity.

Open and Distance Learning in Turkey

Generations of ODL in Turkey

After years of hard-fought wars, Turkey gained independence and declared itself a republic in 1923. However, as a country that lost much of its educated population as a result of the long-waged wars, education became one of the primary areas of reform in order to rebuild the country.

ODL has a long history in Turkey and can be examined in four distinct generations (Figure 1): the first generation covers the period of 1923-1955 and involved discussions and suggestions; the second generation covers the period of 1956-1975 and involved distance education being carried out in the form of correspondence (1956-1975); the third generation covers the period of 1976-1995 and involved distance education being conducted through the use of audio-visual tools (1976-1995); and finally, the fourth generation covers the period of 1996-present and involves the use of ICT-based applications (Bozkurt, 2017).

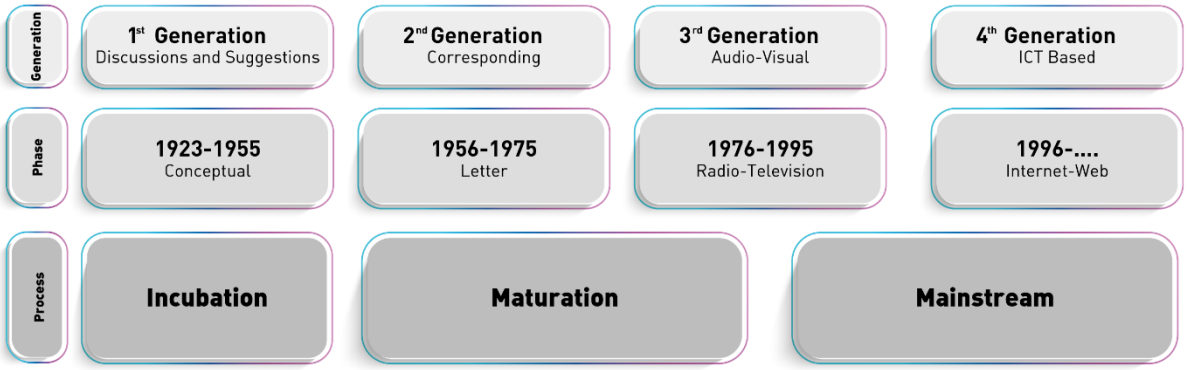

Figure 1. Generations of ODL in Turkey, adapted from "The Past, Present and Future of the Distance Education in Turkey" by A. Bozkurt, 2017, *Açık Öğretim Uygulamaları ve Araştırmaları Dergisi, 3,* p. 88. CC BY-NC-SA.

One of the first and most significant contributions to the development of ODL was made by John Dewey in 1924, just a year after Turkey declared itself a republic. Dewey's suggestions in the *Report and Recommendation upon Turkish Education* (Dewey, Boydston, & Ross, 1983) guided and shaped many of the educational practices in Turkey, including ODL (Boydston, 2008), which Dewey recommended being in the form of correspondence education: "(I)n-service teachers there should be for teachers in service correspondence courses. These might be conducted either by the Ministry of Public Instruction or by a normal school" (Dewey et al., 1983, p. 9). However, despite these visionary suggestions, the remaining 58 years saw many failed attempts to actually put ODL into practice.

The Demand for Higher Education in a Developing Country

According to 2018 data, Turkey has a population of 80 million, with the median age being 32 (Table 1; Turkish Statistical Institute, 2018). With the high youth population, there is a high demand for higher education (Askar, 2005; Cekerol, 2012; Geray, 2007; Ozkul, 2001). The combination of the continuing high demand, socio-economic factors (Berberoğlu, 2015; Kilinç, Yazici, Gunsoy, & Gunsoy, 2016; Latchem, Özkul, Aydin, & Mutlu, 2006; Gursoy, 2005), and the opportunities provided by ICT have resulted in the adoption of ODL and open universities in countries like Turkey, where there is a strong mass demand for higher education (Demiray, 2012), as a solution to capacity problems in higher education (Askar, 2005; Cekerol, 2012).

Table 1

Turkey's 2018 Population Statistics

	Total		Male		Female	
	f	%	*f*	%	*f*	%
Total	80 810 525	100.0	40 535 135	100.0	40 275 390	100.0
0-14	19 033 488	23.6	9 769 101	24.1	9 264 387	23.0
15-64	54 881 652	67.9	27 732 601	68.4	27 149 051	67.4
65 +	6 895 385	8.5	3 033 433	7.5	3 861 952	9.6

Note. Adapted from "Basic statistics: Population and demography" by Turkish Statistical Institute, 2018 (http://www.tuik.gov.tr/UstMenu.do?metod=temelist). In the public domain.

Student numbers at the K-12 educational level further justify the demand for higher education. Accordingly, there is a total of 17,319,433 students at the K-12 level, which constitutes around 20% of the overall population. Among all these students, 5,513,731 attend traditional high school, while more interestingly, 1,287,249 attend high school through open education, which could be considered an indicator of the potential ODL has in Turkey (Turkish National Ministry of Education, 2018) and further demonstrates that ODL has an established tradition in the Turkish Education System (Askar, 2005; Selvi, 2006).

According to 2018 data, 2,322,421 students completed a university entrance exam, of which 43% had just graduated high school while 57% had graduated from high school at an earlier time. Among these applicants, only 910,680 (associate programs: 436.904; bachelor programs: 473.776) achieved scores high enough to be placed in universities (Turkish Student Assessment, Selection, and Placement Center, 2018a); and once graduated, the students in ODL programs are able to obtain academically equivalent degrees (Askar, 2005).

Turkish Higher Education and ODL: The Current State of the System

The Turkish education system consists of pre-school education, primary education, secondary education, and higher education with a slightly changing structure from its counterparts (see Appendix A). According to the Turkish Council of Higher Education (CoHE; 2018), there are around 7.5 million students in Turkish higher education system, a figure that constitutes approximately 10% of the overall population in Turkey (around 80 million) in 2018 (Table 2). Furthermore, the 3.5 million ODL students constitute around 50% of the overall higher education population, or 4% of the overall country population.

A major distinction in Turkish higher education is the legal definition of *Open Education* and *Distance Education*. Accordingly, open education offers open admissions with minimal entry requirements and flexible learning opportunities, whereby learning is self-paced, attendance is not required, learners are highly independent in time and space, and learning materials and spaces can be offline and/or online. On the other hand, distance education offers partly flexible admissions, whereby students are expected to meet predefined entry requirements and pay for and attend online courses that are delivered in online spaces with online materials. Moreover, open education can currently be delivered by only three dual-mode state universities (Anadolu, Atatürk, and İstanbul Universities; see Table 3), whereas distance education can be delivered by private or state universities.

Table 2

2018 Turkish Higher Education Statistics

	Total number of students in 2018					
	Male		Female		Total	
	f	%	*f*	%	*f*	%
Overall	4047302	53.5	3513069	46.5	7560371	100.0
Associate's	1424366	18.8	1344391	17.8	2768757	36.6
• *Formal education (F2F/Free)*	451531	6.0	323945	4.3	775476	10.3
• *Formal education (F2F/Paid)*	214158	2.8	106787	1.4	320945	4.2
• *Distance education (e-learning/Paid)*	20990	0.3	14722	0.2	35712	0.5
• *Open education (Free)*	737687	9.8	898937	11.9	1636624	21.6
Bachelor's	2292542	30.3	1949299	25.8	4241841	56.1
• *Formal education (F2F/Free)*	903108	11.9	932084	12.3	1835192	24.3
• *Formal education (F2F/Paid)*	250119	3.3	178885	2.4	429004	5.7
• *Distance education (e-learning/Paid)*	11663	0.2	16390	0.2	28053	0.4
• *Open education (Free)*	1127652	14.9	821940	10.9	1949592	25.8
Master's	275781	3.6	178892	2.4	454673	6.0
• *Formal education (F2F/Free)*	224644	3.0	168085	2.2	392729	5.2
• *Formal education (F2F/Paid)*	30779	0.4	8457	0.1	39236	0.5
• *Distance education (e-learning/Paid)*	20358	0.3	2350	0.0	22708	0.3
Doctorate	54613	0.7	40487	0.5	95100	1.3
• *Formal education (F2F/Free)*	54613	0.7	40487	0.5	95100	1.3

Note. Adapted from "Higher education statistics" by CoHE, 2018 (https://istatistik.yok.gov.tr/). In the public domain.

In Turkish higher education, open universities can deliver ODL only for associate's and bachelor's degrees, and they are offered by only three state universities (Anadolu, Atatürk, and İstanbul Universities; Table 3). Students in Turkey gain access to institutions of higher education based on their composite scores, which consist of school grade point averages and the scores obtained on the central selection examination organized by the *Turkish Student Assessment, Selection and Placement Center*, an autonomous public body (Turkish Student Assessment, Selection and Placement Center, 2018b).

For enrollment in Anadolu University Open Education Faculty, students can benefit from different entry points. Accordingly, students are eligible to enroll by either (a) getting a minimum score on the central selection examination, (b) getting a sufficient score on the vertical transfer examination, (c) gaining the right to enroll through lateral transfer, or (d) being already enrolled in or graduated from a higher education program. In other words, there are multiple entry points to access higher education through the Anadolu University, Open Education Faculty. As can be seen in Table 3, in terms of enrolled number of students, Anadolu University is the leading university offering ODL (Appendix B shows enrolled student numbers according to level of study).

Table 3

Open Universities in Turkey and Their Student Numbers by 2018

	Associate's			Bachelor's			Overall			
	Male	Female	Total	Male	Female	Total	Male	Female	Total	
University									*f*	%
Anadolu	630046	745791	1375837	1059454	735331	1794785	1689500	1481122	3170622	88.4
Atatürk	88653	121329	209982	23447	31512	54959	112100	152841	264941	7.4
Istanbul	18988	31817	50805	44751	55097	99848	63739	86914	150653	4.2
Total	737687	898937	1636624	1127652	821940	1949592	1865339	1720877	3586216	100.0

Note. Adapted from "Higher education statistics" by CoHE, 2018 (https://istatistik.yok.gov.tr/). In the public domain.

Anadolu University

A Historical and Panoramic Outlook

Yılmaz Büyükerşen, the founder of ODL in Turkey, first became inspired in open universities following his 1966 visit to the United Kingdom. At this time, discussions were beginning in the United Kingdom around the idea of an open university as a model for delivering education to learners who demanded knowledge in a less traditional and more flexible way. However, Büyükerşen faced great struggles to convince policy makers that education could be delivered through ODL (Büyükerşen, 2009). It was not until 1981, after many failed attempts and a great deal of effort, that Anadolu University, Open Education Faculty, was legally defined as an open university, and in 1982, it began to deliver education through ODL to meet the increasing demand for higher education.

Originally established in 1958, Anadolu University, a state university, did not start delivering learning content through ODL until 1982 when it started delivering education as a dual mode university to both on- and off-campus students. The main objective of Anadolu University's ODL practices was to provide equality in education. In this regard, openness as a philosophy was at the core of Anadolu University ODL practices, with Anadolu University defining its vision as "to be a global university with a focus on lifelong learning" (Anadolu University, 2018a, para, 2) and its mission as

> to contribute to the accumulation of universal knowledge and culture through education, research, and projects in the fields of science, technology, art, and sports in order to provide high-quality distance and on-campus learning opportunities to individuals at any age, and to produce creative and innovative solutions in line with community needs, with a view to improving the life quality of people in the city, region, country, and world. (Anadolu University, 2018a, para, 2)

These guiding principles were built from the following values: Transparency, accountability, fairness, human-centeredness, innovativeness, creativity, reliability, excellence, and universality (Anadolu University, 2018b).

Local and Global ODL Practices of Anadolu University

Located in Eskişehir, a city well-known for its science, culture, and youth, the two campuses of Anadolu University feature 17 faculties (bachelor's), three of which are offered as ODL, three applied academic schools, one of which is music and drama, four vocational schools (associate's), nine graduate schools (five of which are at the master's and doctoral level), and 30 research centers. A total of 2,539 academic staff and 1,692 administrative staff are employed by Anadolu University. As a dual-mode university, the student body is 3,211,489 strong, with 39,577 on-campus students and 3,170,622 off-campus students (793 in distance education programs and 3,170,622 in ODL programs). Of the 3,170,622 on-campus students, 1,193,802 active students renewed their enrollment, while 1,976,820 passive students did not renew their enrollment yet reserved their right to do so. Since 1982, the total number of students to have graduated from Anadolu University ODL system is around 2.8 million.

Offering 39 associate's and 19 bachelor's degree programs, Anadolu University ODL programs offer a considerably high number and diversity of programs. Though most of the programs are in Turkish, programs in English and Arabic are also available, and furthermore, Anadolu University teaches Turkish online for free to anyone interested in learning it. Learners across the globe who are enrolled in these programs can take their exams in 18 countries located in three continents. Starting in the 2000s, as a result of the European Union Erasmus Student Exchange Program for on-campus programs and the increasing number of offices, contact points, and exam centers abroad, the student profile grew to be more international.

Learners' Profile and Demographics

In parallel with the demand for higher education in Turkey, the number of students who prefer ODL has increased every year (Figure 2). At the advent of ODL in Turkey in 1982, there was a total of 26,796 enrolled students, which grew to 3,170,622 by 2018 (1,193,802 active students and 1,976,820 passive students). While ODL met 13% of the demand for higher education in 1982, in 2018, it met 47% of the overall demand.

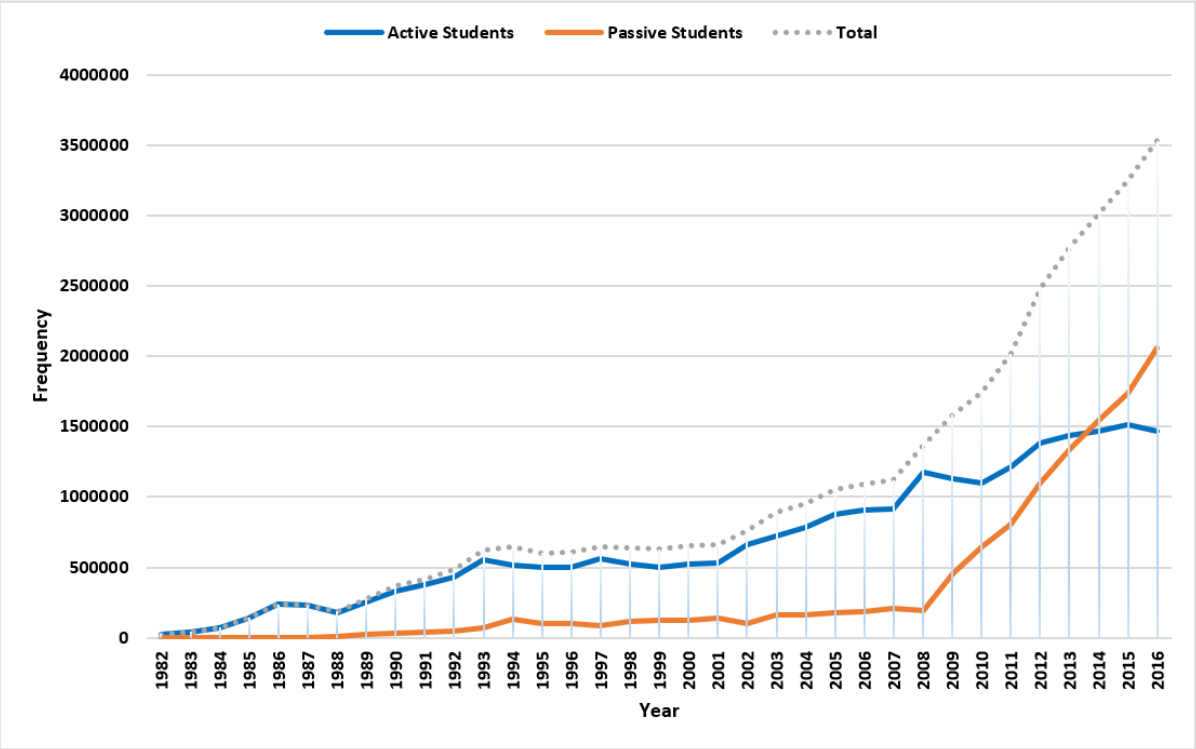

Figure 2. Active and passive student numbers (1982-2016).

In terms of gender distribution (Figure 3), while there were 5,945 female students (23%) and 20,851 male students (77%) in 1982 (Büyük et al., 2018), in 2018, there were 1,689,500 male (53%) and 1,481,122 (47%) female students (CoHE, 2018). Considering the change in the number of students by gender from 1982 to 2018, it is clear that ODL in Turkey has been effective in reducing the level of inequity stemming from gender differences and has "helped more women participate in higher education programs across the country over the years, leading to a relatively more normalized distribution of gender in education across the geographical regions" (Gunay Aktas et al., 2019, p. 168).

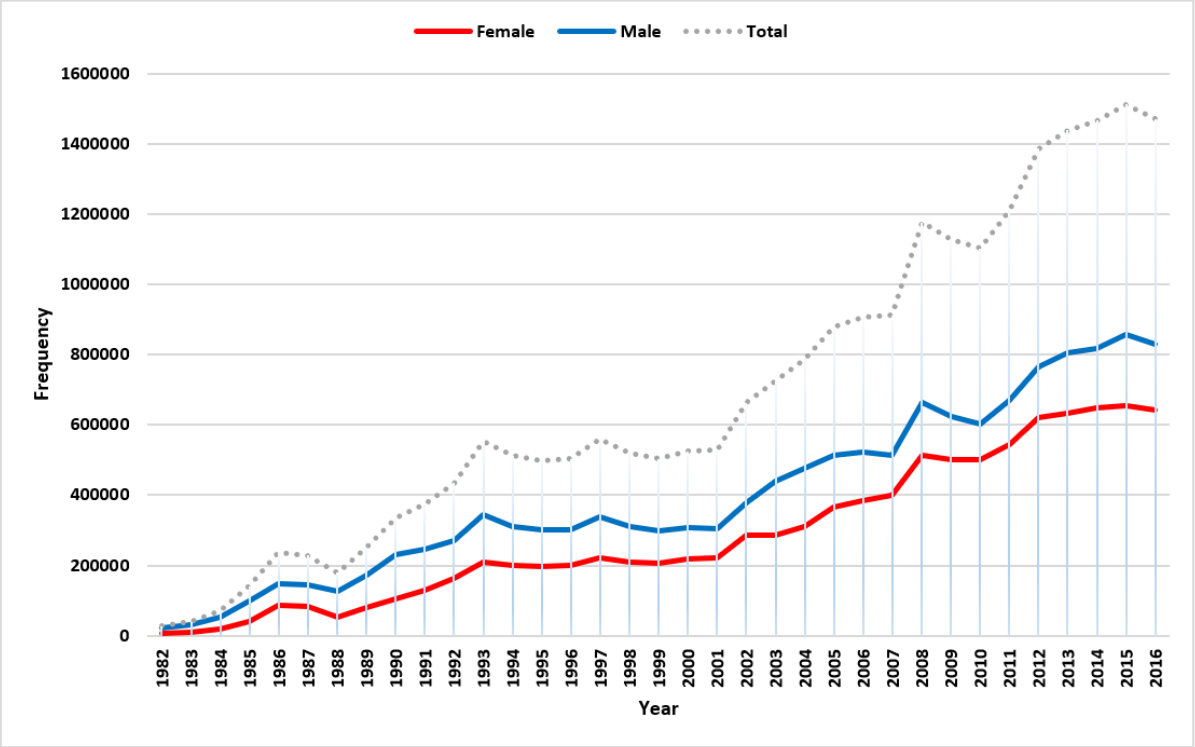

Figure 3. The number of active male and female student numbers (1982-2016).

The changes and diversification in the distribution of age over time is particularly interesting (Figure 4). While in 1982, the 25 and below age group constituted the majority of students, in 2016, the 25 and below age group constituted 47%, the 27-35 age group constituted 37%, the 36-50 age group constituted 15%, and finally, the 51 and over age group constituted 1% (Büyük et al., 2018). The pattern in age distribution differs considerably from that of other open universities around the world (Garrett, 2016) in being very similar to conventional on-campus universities. In this regard, the large number of young students enrolled in ODL courses demonstrates that ODL is considered as a viable option, one in high demand for meeting higher education needs in Turkey, and that the distribution of different age groups (Figure 4) is proof that ODL in Turkey supports lifelong learning for those who demand it at any age. Another important point to consider is that the diversity in age groups can serve as an indicator for the need of heutagogy (Canning, 2010), which assumes that teaching and learning processes are a self-determined and self-directed lifelong endeavor and suggests that instructional design and learning strategies should be developed on the basis of this perspective.

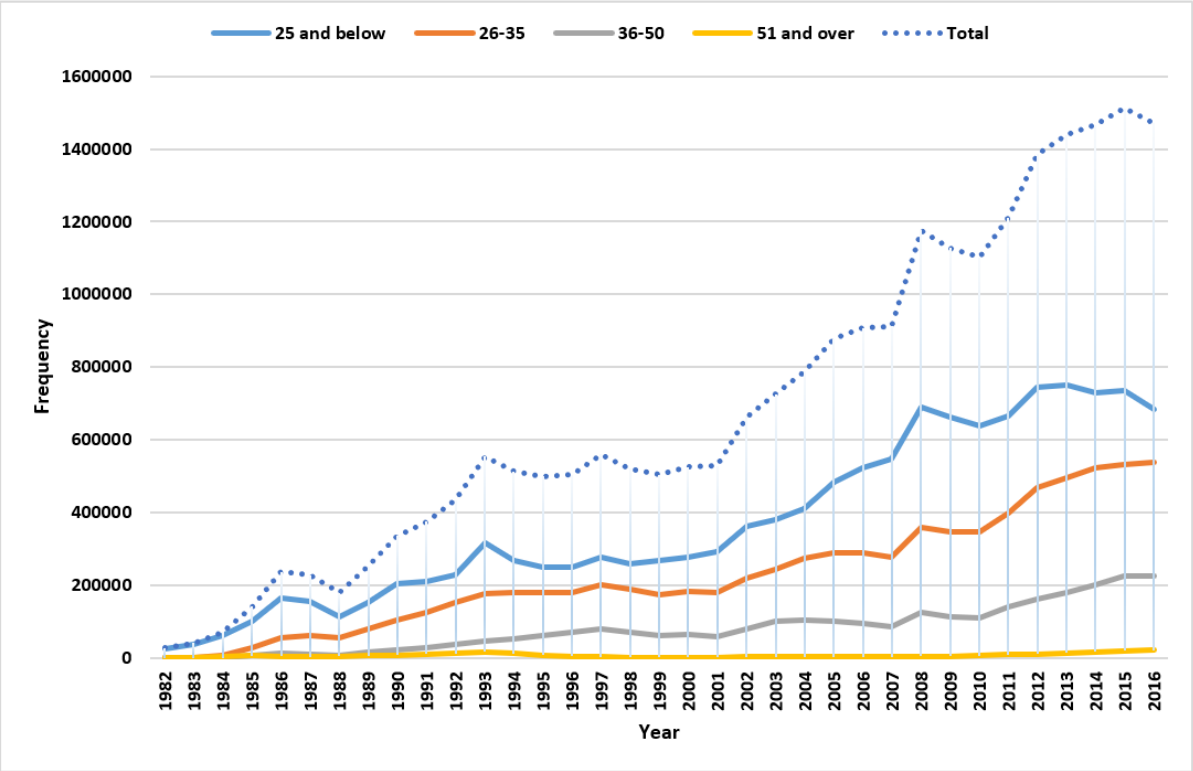

Figure 4. Distribution of age at Anadolu University (1982-2016).

Enrollment types also demonstrate a changing pattern through time (Figure 5). Especially after the 2000s, those who have an associate's degree and wish to enroll in a bachelor's degree program on the basis of their scores on the vertical transfer exam, as well as those who are already qualified and hold an associate's or bachelor's degree, increase steadily, while those who are enrolled based on the central university entrance exam decrease when compared to other types of enrollment. This confirms the view by Tait (2018b) who reported that "some open universities have a significant appeal to students who are already well-qualified but wish to continue learning later in life" (p. 16).

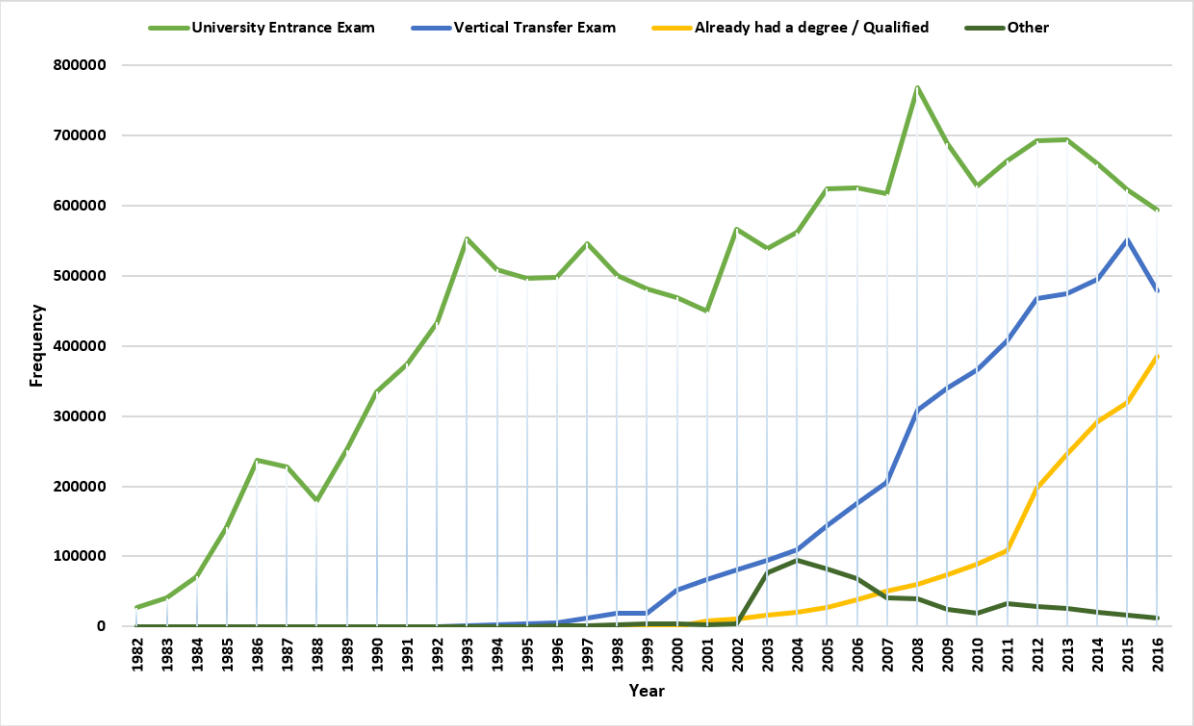

Figure 5. Enrollment types at Anadolu University (1982-2016).

Overall, the data on Anadolu University demonstrate that the figures related to student numbers, cost, and budget are massive, being on a scale which can be expected for an open university. Massiveness and scale-space approaches, however, should not be limited to student numbers alone. According to Levy's (2011) description of such implementations (i.e., Massive Open Online Courses [MOOCs]), massive also covers learners' diversity, backgrounds and experiences, the communication tools, the Web technologies, the amount of distributed knowledge and the complexity of the distribution, the overwhelming width and depth of discourse among the participants, the multi-modal nature of the discourse, and finally, the massive amount of time needed to manage and organize. However, it should also be noted that the comprehensiveness attributed to the term *massive* stems, metaphorically speaking, from the openness philosophy, which acts like a compass and lighthouse for those who seek knowledge. This indicates that the term *open* is subject to changes and evolves over time, which points to the need to define it accordingly if the role of open universities is intended to be identified within the ecology of higher education in the 21st century.

Learning Materials and Spaces

For teaching and learning purposes, both online and offline materials are used and provided to every student of Anadolu University, Open Education Faculty. At Anadolu University, a wide array of learning materials are available, and all of these materials are based on course books that are delivered through branch offices and made accessible through the Anadolu E-Campus (Learning management system [LMS]). The core materials include course books, and any other materials are generated in line with the content provided in these books (e.g., printed book, e-book, interactive e-book, audio book, chapter summaries, tests, quizzes, chapter videos, interactive videos, interactive multimedia chapters, game-based quiz applications).

Students can access their learning materials through the LMS of Anadolu University, where all available materials are categorized according to the relevant chapter of course books. Moreover, students can participate in either synchronous or asynchronous Web-based courses. Lastly, in addition to these learning spaces, students can also attend face-to-face courses, offered in all provinces in Turkey, on designated dates.

Outside of the learning materials and spaces offered in accordance with the curriculum, students can join learning communities (book, cinema, photography, history, and music), where they can socially interact with other students. Through AKADEMA, the massive open online course (MOOC) platform of Anadolu University, students can attend various courses from which they can earn certificates. In brief, Anadolu University provides an impressively wide spectrum of on- and offline learning materials, spaces, and opportunities, a feature which is thought to be critical to narrowing the information gap and digital divide.

Exams, Assessment, and Evaluation

The Anadolu University ODL system offers proctored exams at designated exam centers, and as an open university that deals with a massive number of students, it mostly employs summative assessment techniques, which are common in many open universities (Karadag, 2014). At Anadolu University, ODL students are generally assessed and evaluated through multiple choice questions, but there are specific programs where assessments and evaluations are conducted with open-ended questions and assignments/projects. Based on bell curve statistics, the grades are defined separately for each course.

Organizing exams is a massive undertaking. For instance, in the 2017 Fall term, over a period of two days and four sessions, 1,371,589 students (including 2,242 imprisoned students and 4,869 disabled, handicap, or students with special needs) attended exams in 202,227 classrooms. The 2,242 imprisoned students were provided all learning materials (especially offline materials that they could use in prisons), and they were able to attend their exams at the site of their respective prisons. More importantly, the 4,869 disabled, handicap, or students with special needs were able to get their learning materials designed according to their needs (audio materials, materials written in braille alphabet, subtitle support, etc.) and upon request, they were able to attend their exams at their homes, hospitals, or any other facility they resided. The total number of people who were in charge of facilitating exams in the 2017 Fall term was 502,002 in Turkey and across the globe. The total number of ODL students who attended exams in different sessions over a period of two days was 3.6 million.

Support Services

Academic and non-academic support services are provided through 113 branch offices in Turkey and 9 branch offices abroad. Both active and passive students can receive academic and non-academic support through these offices. Moreover, a call center, open 24/7, has been available to all Anadolu University ODL students since 2016. ODL students, however, can manage most of their student affairs through the ANASIS system, or through a service system integrated with the e-government platform of Turkey. Apart from these communication opportunities, students also have access to face-to-face and online (both synchronous and asynchronous) support.

Knowledge Production and Dissemination

Anadolu University further functions as a particularly remarkable institution for its research and development, and knowledge production and dissemination. In addition to the many programs it offers

in various fields at the master's and doctoral levels, there are three ODL programs that offer master's (with and without thesis) and doctoral degrees (Kocdar & Karadag, 2015). Research trends in ODL in Turkey demonstrate that Anadolu University is the leading institution in terms of its contribution to ODL, where the specific focus has been on online learning processes (Bozkurt et al., 2015; Durak et al., 2017). In this context, it can be concluded that by investing in research and development, Anadolu University has contributed to the field of ODL by producing knowledge in an open university at scale, and by encouraging change and innovation for Turkish higher education.

From a Mega to a Giga University

A university with more than one hundred thousand students is defined as a mega university (Daniel, 1996). Under this definition, there are three core components: Distance teaching/ODL, higher education, and size. Accordingly, the primary activities of these universities include delivering learning content through ODL at the higher education level, demonstrating economies of scale, having competent logistics, and using information and communication technologies (ICT) to promote open learning (Daniel, 1996). The student numbers increased enormously starting from the new millennium (Daniel, 2011), with the student numbers in some open universities reaching into the millions (Tait, 2018b). Interestingly, whereas mega universities had originally intended to reach adult students, the situation has changed, with young students now dominating the student body of these universities, resulting in the motto of open universities shifting from that of "second chance to get a degree" to "first choice for lifelong learning" (Daniel, 1996, p. 37).

When open universities first emerged, there was skepticism regarding survival, sustainability, and necessity (Keegan & Rumble, 1982). However, most open universities managed to mature and survive by adopting competitive strategies for the global higher education field. Tait (2018b) argues that we now need to figure out the next phase for open universities and the direction we should go in moving forward. Currently it is known that:

> The important factors, such as the globalization, the changes in population movements, the transformation into an information society, the increasing competition in economics, and the changes and progresses in information and communication technologies have an ongoing impact on all fields of life, including higher education. The areas that these factors affect in higher education range from the administration of higher education institutions, the institutional structuring and the diversity of services offered to the financing structure, R&D activities and international cooperation. (Özgür & Koçak, 2016, p. 202)

In addition to these above-stated factors, some of the early mega universities have transformed into giga institutions with more than one million students. This, of course, requires developing new strategies in management, educational approaches, support services, funding, and logistics. Moreover, some of these universities have turned into global campuses, now exposed to digital transformation, and their student populations are globally diverse. This requires distinguishing mega universities from giga universities and coming up with an operational definition for the latter. In this context,

> *a giga university can be defined as a higher education institution that operates locally or globally, that has adopted an open and distance learning approach capable of*

> *reaching 1M or more students, and that has developed strategies to create a mass open learning ecology.*

Under this definition, Anadolu University, which was originally recognized as a mega university, can now be defined as a giga university. Operating globally, with a massive number of learners and economy of scale, Anadolu University meets half of the demand for higher education in Turkey and has put forth strong local and global efforts to provide access to knowledge and encourage lifelong learning.

Conclusion and Suggestions for Future Implications

This study has explored the current state of open universities by focusing on Anadolu University, which is considered to be a unique case, insofar as it demonstrates a higher education institution that has transformed from a mega to a giga university. The examination of Anadolu University revealed some significant issues to consider. For example, as revealed in the Learning Materials and Spaces section, open universities play a critical role in narrowing the information gap, by providing learning opportunities for anyone who demands it, and in narrowing the digital divide, by diversifying online and offline learning materials and access options. As explained in the Learners' Profile and Demographics section, open universities also can enhance equality of opportunity in education by providing different entry points to higher education and encourage lifelong learning. More importantly, open universities can balance out gender inequalities in education. Finally, as indicated in the Knowledge Production and Dissemination section, by experimenting with innovative approaches, open universities can be a catalyst of change and innovation and serve as a role model for other higher education institutions.

Based on the results of this investigation of open universities and the experiences that have been documented, the following suggestions can be made for future research on this subject. First, considering the tectonic shifts and paradigm changes stemming from developments in ICT, the possibilities provided by online, networked, and distributed learning spaces, and the increasing demand for higher education, there is a need to redefine the idea of openness in the 21st century and to identify its core concepts in order to create a common mission and vision among all open universities. Second, as in the case of Anadolu University, open universities operate globally, and therefore it can be suggested that open universities engage in international collaborations and partnerships to exchange experiences and know-how. Third, since learner profiles have become more international and diverse, it is important to conduct more research about culturally relevant open pedagogies. Fourth, as open universities welcome learners from diverse backgrounds, who are independent in time and space and self-directed, curricula should be developed and designed based on the principles of heutagogy to provide self-determined learning experiences. Lastly, considering that the student numbers in mega and giga open universities are massive, and that every decision affects millions of students, the unbundling of services should be viewed as a viable option to provide effective, efficient, and attractive learning experiences for those who enter the world of open learning.

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Appendix A

Turkish Higher Education System

The basic structure of the Turkish National Education System consists of non-compulsory pre-school education, compulsory primary (elementary and middle school) and secondary (high school) education, and higher education. Primary education begins at the age of 5.5 (66 months), lasts eight years and involves four years each of elementary and middle school education. Secondary education is also four years but is divided into two categories, "General High School Education" and " Vocational and Technical High School Education". Entry into these categories is based on composite scores obtained from a centralized exam for secondary schools.

The higher education system in Turkey is managed by the Council of Higher Education (CoHE [Yükseköğretim Kurulu: YÖK]), an autonomous public body responsible for the planning, coordination, governance and supervision of higher education within the provisions set forth in the Constitution of the Turkish Republic and the Higher Education Law. Both state and non-profit foundation universities are established on the basis of law and subjected to the Higher Education Law and to the regulations enacted in accordance with it.

Higher education in Turkey includes all post-secondary higher education programs, which consist of short, first, second, and third cycle degrees, in terms of the terminology of the Bologna Process. The structure of Turkish higher education degrees is based on a two-tier system, except for dentistry, pharmacy, medicine and veterinary medicine programs, which have a one-tier system. The duration of these one-tier programs is five years (300 ECTS), except for medicine, which lasts six years (360 ECTS). The qualifications in these one -tier programs are equivalent to the first cycle (bachelor's) plus second cycle (master's) degree. Undergraduate level of study consists of short cycle (associate's [önlisans]) and first cycle (bachelor's [lisans]) degrees which are awarded after successful completion of full-time two-year (120 ECTS) and four-year (240 ECTS) study programs, respectively.

Graduate level of study consists of second cycle (master's [yüksek lisans]) and third cycle (doctorate [doktora]) degree programs. The second cycle is divided into two sub-types, namely, master's without thesis and master's with thesis. Master's programs without thesis require 60 to 90 ECTS credits and consist of courses and a semester project. The 60 ECTS non-thesis master programs are exceptional and exist in only a few disciplines. The master's programs with a thesis require 90 to 120 ECTS credits, which includes courses, a seminar, and a thesis. Third cycle (doctorate) degree programs are completed after having earned a minimum of 180 ECTS credits, which consists of completion of courses, passing a proficiency examination and a doctoral thesis. Specialization in medicine, which is accepted as equivalent to third cycle programs, is carried out within the faculties of medicine, university hospitals and the training hospitals operated by the Ministry of Health.

Universities consist of graduate schools (Institutes) offering second cycle (master's) and third cycle (doctorate) degree programs, faculties offering first cycle (bachelor's degree) programs, four-year higher schools offering first cycle (bachelor's) degree programs with a vocational emphasis and two-year vocational schools offering short cycle (associate's) degree programs of a strictly vocational nature.

Since 2003, first cycle degree holders may apply directly to third cycle (doctorate) programs if their performance at the first cycle degree level is exceptionally high, their national central Graduate Education Entrance Examination score is also high, and their application is approved. For these students, the theoretical part of the programs requires additional courses of 60 ECTS credits.

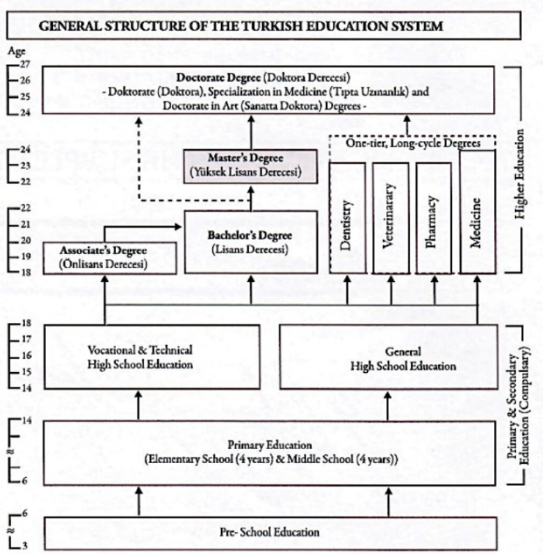
Admission of national students to short and first cycle degree programs is centralized and based on a nationwide one/two-stage examination(s) conducted by an autonomous public body (Assessment, Selection and Placement Center [Öğrenci Seçme Yerleştirme Merkezi: ÖSYM]). Candidates gain access to institutions of higher education based on their composite scores, which consist of their scores on the selection examination and their high school grade point averages. Admission to graduate programs is directly conducted by the higher education institutions (HEIs) within the frameworks of the publicly available national and institutional regulations. Admission of foreign students to programs at all levels of higher education can be done by direct applications of candidates to HEIs based on publicly available national and institutional regulations.

The Turkish National Qualifications Framework for Higher Education (TYYÇ: Türkiye Yükseköğretim Yeterlilikler Çerçevesi): The National Qualifications Framework for Higher Education in Turkey, developed in reference to the QF for European Higher Education Area and the EQF for lifelong learning, was adopted by the CoHE in 2010. The framework has been developed as part of a single national qualification framework, which would eventually consist of an 8-level national framework covering all levels of educations on completion of the ongoing work at the national level, in which the higher education levels lie on levels between 5 to 8. The levels of the TYYÇ corresponding to the European overarching qualifications framework, as well as to ECTS credits and student workload, are shown below.

* The national credit system is based on contact hours (i.e. theoretical or practical hours per week). 1.0 credit stands for each hour of lecture per week, while 0.5 credit stands for each hour of laboratory work or practicum per week.

TYYÇ LEVELS, QUALIFICATIONS TYPES AND ECTS CREDITS

Higher Education Levels/Cycles			AWARDS/ DEGREES	LENGTH (Year)	TOTAL ECTS CREDITS (Year x 60 ECTS)	TOTAL STUDENT WORKLOAD (h) (1 ECTS=25-30h)
QF-EHEA	EQF-LLL	TYYÇ LEVELS				
3	8	8	Doctorate Specialization in Medicine Doctorate in Art	3 (min.)	180 (min.)	4.500 -5.400
2	7	7	Master's Degree	1 - 2	60 -120	1.500 -3.600
1	6	6	Bachelor's Degree	4	240	6.000 - 7.200
Short Cycle	5	5	Associate's Degree	2	120	3.000 - 3.600



Appendix B

On-Campus and Off-Campus Student Numbers of Anadolu University by 2018

Associate's				
Delivery mode	Male (*f*)	Female (*f*)	Total (*f*)	Total (%)
Formal education (F2F/Free)	3215	1877	5092	0.16
Formal education (F2F/Paid)	692	141	833	0.03
Distance education (e-learning/Paid)	82	45	127	0.00
Open education (Free)	630046	745791	1375837	42.84
Total	634035	747854	1381889	43.03
Bachelor's				
Delivery mode	Male (*f*)	Female (*f*)	Total (*f*)	Total (%)
Formal education (F2F/Free)	13214	12845	26059	0.81
Formal education (F2F/Paid)	104	47	151	0.00
Distance education (e-learning/Paid)	0	0	0	0.00
Open education (Free)	1059454	735331	1794785	55.89
Total	1072772	748223	1820995	56.70
Master				
Delivery mode	Male (*f*)	Female (*f*)	Total (*f*)	Total (%)
Formal education (F2F/Free)	2955	2306	5261	0.16
Formal education (F2F/Paid)	171	135	306	0.01
Distance education (e-learning/Paid)	545	121	666	0.02
Open education (Free)	0	0	0	0.00
Total	3671	2562	6233	0.19
Doctorate				
Delivery mode	Male (*f*)	Female (*f*)	Total (*f*)	Total (%)
Formal education (F2F/Free)	1342	1030	2372	0.07
Formal education (F2F/Paid)	0	0	0	0.00
Distance education (e-learning/Paid)	0	0	0	0.00
Open education (Free)	0	0	0	0.00
Total	1342	1030	2372	0.07
Grand total (Associate's, Bachelor's, Master, Doctorate)				
Delivery mode	Male (*f*)	Female (*f*)	Total (*f*)	Total (%)
Formal education (F2F/Free)	20726	18058	38784	1.21
Formal education (F2F/Paid)	967	323	1290	0.04
Distance education (e-learning/Paid)	627	166	793	0.02
Open education (Free)	1689500	1481122	3170622	98.73
Total	1711820	1499669	3211489	100.00

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Maturity Levels of Student Support E- Services Within an Open Distance E-learning University

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Abstract

The University of South Africa (UNISA) is one of the distance education universities that is shifting from open distance learning (ODL) to open distance e-learning (ODeL). UNISA started as a correspondence institution in the 1950s and it has since evolved into an ODeL university. The aim of this research was to assess and determine the maturity levels of UNISA lecturers' and tutors' explorations of various forms of e-learning technologies to support students in an ODeL environment. Semi-structured interviews were conducted with 12 academic staff members. A hybrid approach involving inductive and deductive reasoning was used to guide the whole research process. The online course design maturity model (OCDMM) was modified and adapted in order to guide data collection, data analysis, and the interpretation of results. The results of the study indicate that the maturity levels of UNISA's student support e-learning technologies are at the basic levels of the maturity assessment framework for open distance e-learning. It is hoped that the results of this research will serve as a starting point that the University can use to constantly measure improvements made in advancing e-learning activities.

Keywords: e-learning, maturity assessment, open distance education

Introduction

The expansion of open universities worldwide has provided access to many students who need higher education qualifications. This expansion is attributed to the open university movement which began with the establishment of the first distance education (DE) universities, namely the University of South Africa (UNISA) and UK's Open University (Tait, 2008). The most common characteristics among open universities are their provision of education through distance learning, hence the name open distance learning (ODL), as well as their open, flexible, and accessible offerings. The development and impact of modern technologies has led to an increase in the adoption and utilisation of these technologies to support students' learning. According to Bernath, Szucs, Tait, and Vidal (2009), modern technologies "are becoming standard elements of institutional practice" (p. xi), hence the adoption of e-learning in ODL universities.

UNISA is one of the ODL universities that is shifting its ODL to open distance e-learning (ODeL). From its beginnings as a correspondence institution in the 1950s, it has since evolved into an ODeL university. This evolution has occurred through five generations of DE (Taylor, 2001), namely (a) print technology (correspondence); (b) multimedia (e.g., videos, CDs); (c) computer- mediated communications (including videoconferencing); (d) Internet-based resources; and online interactive multimedia. Although it is difficult to identify the end or beginning points of these generations because they overlap (de la Pena-Bandalaria, 2007), UNISA student support services have also evolved along with these generations, hence the term student support e-services. This term refers to provision of a variety of information and communication technology resources and instructional methods to help students succeed in their studies. The evolution of student services is necessary because DE requires various technologies to minimise geographical and pedagogical gaps between students and lecturers (Moore, 1993).

According to Makhanya (2016), the shift to ODeL is intended to establish UNISA "as an African university leading the world in using all the technologies available in integrated ways so that technology is a means to an end, not the end itself" (p. 7). This aligns with Garrison and Anderson's (2003) advice that "when adopting new communication technologies with the potential to fundamentally alter the teaching and learning transaction, it is essential we think through our educational ideals" (p. 11).

UNISA's e-learning initiative started in 2013 with the launch of the University's integrated e-tutor model, a student support model that introduced an e-tutoring system for modules with a large number of students. E-tutoring is delivered mainly through an online learning management system (LMS) referred to as myUnisa, a learner-centred environment for synchronous and asynchronous learning interactions.

An e-learning LMS can be described as "a self-contained webpage with embedded instructional tools that permit faculty to organise academic content and engage student in their learning" (Gautreau, 2011, p. 2). LMSs, now ubiquitous in higher education (Anderson & Dron, 2017; Rhode, Richter, Gowen, Miller, & Wills, 2017) have various management tools including course content, learning resources, announcements, examinations, and discussion forums. Mtebe (2015) notes that some institutions do not use all the tools available in their LMS and many institutions in sub-Saharan Africa do not use the LMS at all, even after some training. Whilst some studies found low levels of LMS use in higher education institutions (Olivier, 2016; Maboe, Nkosi, & Makoe, 2013; Mtebe, 2015), others have found high levels (Coleman & Mtshazi, 2017).

MyUnisa forms part of the University's student support system. Its management tools include (a) discussion forums to facilitate student-student and student-lecturer/tutors course interactions; (b) self-assessment; (c) additional resources; (d) module content; and (e) announcements. Lecturers and e-tutors are trained to be familiar with myUnisa tools. In the myUnisa platform:

> There is no physical face-to-face component, although there could be a virtual face-to face component. All interactions with staff and students, educational content, learning activities, assessment and support services are integrated and take place online. (CHE, 2014, p.10)

This model shares similar characteristics with OU's supported open learning model. In addition to e-tutoring, UNISA has introduced fully online learning and teaching on myUnisa for certain modules. Lecturers and e-tutors (hereafter referred to as lecturers) are expected to (a) facilitate learning; (b) provide guidance on study material, timely feedback, and technical support; and (c) develop learning communities.

The myUnisa initiative has increased cognitive, social, and teaching presences (Garrison, Anderson, & Archer, 2000) thus maximising learning interactions. Could Nagel's (2009) hypothesis that most college students in the United States of America would be studying online by 2014 hold true with UNISA?

While this initiative is commendable, the extent to which UNISA lecturers explore various e-learning technologies, tools, and applications, as well as implement innovative approaches to support students' learning is unclear and has not been fully researched. A 2015 study (Mbati & Minnaar, 2015) of online learning indicated that online facilitators were not using social media technologies to support and enhance students' learning. A more recent study (Ngubane-Mokiwa, 2017) indicated that some UNISA lecturers are reluctant to use modern technologies because "modern electronic technologies force traditionally-inclined lecturers out of the comfort zone of their customary familiar techniques and pedagogies" (p. 118). They "simply upload PDF versions of old learning materials onto myUnisa without providing any pedagogical support" (Ngubane-Mokiwa, 2017, p. 115). This is worrying because the foundation of e-learning involves adopting teaching and learning technologies as well as knowledge of appropriate pedagogical approaches (Mbati & Minnaar, 2015). Koehler, Mishra, Kereluik, Shin, and Graham (2014) observed that teachers lack the knowledge to incorporate technology into their teaching.

In addition, Haukijarvi (2014) noted that traditional face-to-face methods of university lecturing are applied to e-learning "in spite of the many advantages e-learning provides for distance education teaching purposes" (Guri-Rosenblit, 2005, p. 469). As well, it is unclear how e-learning delivery is sustained beyond myUnisa. A study examining LMS use at a US university (Rhode et al., 2017) observed that LMS use can reach a saturation point whereby there is less than 100% adoption and use of the system, despite its longevity. This is a concern because studies on myUnisa use (Olivier, 2016; Maboe et al., 2013) have recorded significantly low student participation. Olivier (2016) indicated that only 132 of 1015 students registered in a compulsory one-year module participated in forum discussions; Maboe et al. (2013) reported that 53 students out of 1,379 participated.

This study sought to better understand UNISA lecturers' exploration and use of various e-learning technologies, tools, and applications to support their students in an ODeL environment. It focused on two objectives:

- to track lecturers' explorations of various e-learning technologies, tools and applications; and
- to assess and determine the maturity levels of e-learning at UNISA in order to better articulate the university's e-learning ability, consistency, quality, and sustainability.

This study was part of a larger research project exploring the quality of student support services in ODL environments. Ethics approval was obtained from the Executive Director of UNISA's Research Department.

E-Learning

There is consensus in the literature that e-learning delivery relies solely on ICTs. According to Haukijärvi (2014) the "E" that signifies electronic has become an essential part of various domains within public and private sector institutions. Calli, Balcikanli, Calli, Cebeci, and Seymen (2013, p. 85) believe that e-learning "has gained traction in educational settings in recent years."

E-learning requires the use of electronic media for a variety of learning purposes that range from "add-on functions in conventional classrooms to full substitution for face-to-face meetings by online encounters" (Guri-Rosenblit (2005, p. 469). These interactions give students the opportunity to complete their courses successfully (Matoane & Mashile, 2013). E-learning is also described as a learning method and a technique for the presentation of academic curricula via the Internet or any other electronic media, including multimedia, compact discs, or other modern technologies (Du Plessis, 2017). Modern e-learning technologies and tools can include: *WhatsApp*, *Facebook*, *Twitter*, smartphones, e-mail, videos, and podcasts.

Studies on e-learning have explored and examined different forms of e-learning delivery, and most have found that social media improves students' engagement, collaboration, and interaction. da Cunha, van Kruistum, and van Oers (2016) used the cultural historical activity theory (CHAT) to examine the use of *Facebook* in Brazilian face-to-face schools. They found that *Facebook* increases students' engagement and collaboration. Hamad (2017) explored students' experiences using *WhatsApp* as a supplementary method of enhancing English language skills. The respondents agreed that *WhatsApp* enriches vocabulary, develops speaking and writing skills, and enhances enthusiasm. This is consistent with earlier observations (Gunawardena, 1995, 164) that computer mediated communication can promote interactive and collaborative learning if course moderators encourage the creation of online communities. Dickey (2010) conducted a qualitative study examining pre-service teacher education students' perceptions of using blogs and found that blogs helped prevent feelings of alienation and isolation for distance students.

Thomas, Briggs, Hart, and Kerrigan's (2017) study described the benefits of social media technology in community building efforts among first-year students. According to this study, social media was used to support different stages of transitioning into a new community. In contrast, a quantitative study by Owusu-Acheaw and Larson (2015) on the use and impact of social media on performance showed that the mobile phone with Internet capability can negatively affect students' academic work. However, the authors recommended that teachers should encourage students with such devices to use them for research

purposes. In a similar quantitative study (Irwin, Ball, Desbrow, & Leveritt, 2012), 51% of students indicated that *Facebook* was an effective learning tool, 37% said it was ineffective, and 12% were not sure.

E-Learning Maturity Assessment

The concept of maturity assessment originates from the information technology (IT) and software industry. Neuhauser (2004) notes that researchers such as Watts Humphrey found that process improvement involves a sequence of steps instead of concurrent activities. This observation and line of thinking led to the development of the first maturity model within the software industry, followed by the subsequent development of various maturity models (Marshall, 2010; Marshall & Mitchell, 2002, 2003, 2006; Neuhauser, 2004; White, Longenecker, Leidig, Reynolds, & Yarbrough, 2003). Kohlegger, Maier, and Thalmann (2009, p. 51) defined maturity models as "popular instruments used to rate capabilities of maturing elements and select appropriate actions to take the elements to higher level of maturity." Maturity, on the other hand, is "an evolutionary progress in the demonstration of a specific ability or in the accomplishment of a target from an initial to a desired or normally occurring end stage" (Mettler, Rohner, & Winter, 2010, p. 335).

Maturity models indicate levels of maturity, ranging from low to high. According to Neuhauser (2004) each level provides "a new foundation of practices on which subsequent levels are built" (p. 2). Therefore, for any learning programme to reach maturity, it should provide "learning opportunities not available at a lower level" (Neuhauser, 2004, p. 2).

For the purpose of this study Neuhauser's (2004) online course design maturity model (OCDMM) was chosen and modified because it supports effective applications of technologies appropriate for e-learning. This model is a tool for planning and evaluating online courses. It is based on a set of best practices and can be helpful in guiding institutions to better understand best practices, technologies, learning principles, and performance standards.

The OCDMM consists of five levels, moving from Level 1 (the initial level) to Level 5 (the integration of best practices). Each level has five key process areas (KPA). KPAs can be described as a group of related activities organized by their common characteristics. Each KPA identifies a series of practices that, "when utilised as a group and built on the prior level, will potentially create an environment supporting increased student performance" (Neuhauser, 2004, p. 3).

Table 1

Online Course Design Maturity Model (OCDMM)

	Key process areas				
Level	Components and appearance	Individualised and personalised	Use of technology	Socialisation and interactivity	Assessment
Level 5: Integrating best practices	Develops learning objects Engaging Effortless navigation Intuitive Processes integrated and linked Multiple sensory input	Resources supporting learning preferences Interactive learning material Electronic mentors Sensitive to cultural differences Self-regulated learning Learning objects matched to students needs and interests Learning preference awareness	Extensive generation of Web links and resources Choices on path practice and community Provides integration of processes Blogs	Community of learners Collaborative problem solving and critical thinking Social presences Alignment of learning preferences to practice	Multiple assessments for student performance course improvement Feedback for effective learning Multiple options for sharing knowledge Learning preference
Level 4: Strategising	Learning objects to meet course goals Well-structured content Audio, video, animation Multimedia Attention-getting	Learner instructor partnership Learner-controlled links Private e-mail for faculty-student contact	Students filter, integrate, and disseminate knowledge from Web resources	Student-generated discussion Students facilitate tasks and group maintenance Collaborative tools used Sensitive to students' needs	Versatility of projects Peer review of work Student-instructor readiness for online work

Level 3: Awakening	Lectures integrated with links and discussion Powerpoint and HTML	Primarily instructor-controlled Private e-mail with students	Discovery of Web resources Faculty and students comfortable with use of technology	Instructor-controlled discussions Sensitive to students' participation Frequent contact	Test pools Papers from students to instructor Student access to Content Management System (CMS)
Level 2: Exploring	Notes online Blended course colours and fonts	Instructor-controlled	Search engine, library databases	If used, discussions are instructor-led	Papers through e-mail
Level 1: Initial	Syllabus, course information All text	Limited access, Instructor-controlled	E-mail, minimal use of CMS	E-mail	None online

Using this model as a framework, a set of principles is proposed to assess the maturity levels of e-learning in ODL environments, considering UNISA as our context. This is consistent with Duarte and Martins (2013) who asserted that any approach aimed at assisting higher education institutions to improve their workflows should "take into account the special characteristics of such organisations" (p. 27). A systematic, three-stage process of constructing a maturity assessment framework for ODeL is described below.

Constructing a Maturity Assessment Framework for ODeL at UNISA

Stage 1. In line with Neuhauser (2004, p. 3), we used good practice (leading practice) principles as a foundation for constructing a framework with which to better understand e-learning maturity at UNISA. The following e-learning best practice principles drawn from the literature should be considered by universities and students:

- E-learning should be delivered through technologies, tools, and applications that are suitable for students and their contexts.
- E-learning tools should be suitable for interactivity.
- User interface and experience should be considered.
- Technology and tools should be appropriate for assessment practices.
- Technology and tools should be appropriate for assignment and examination feedback and feedforward.

Stage 2. Three KPAs were identified. The first related to LMS environment, and includes all online and offline activities conducted on the LMS. The second KPA deals with the use of learning technological tools and applications. Features under this KPA include all technological devices relevant to learning in an ODeL environment. The third KPA is online assessment on the LMS. We believe that these KPAs represent the key practices in an ODeL environment, and when performed collectively, can help the institution achieve its goals.

Stage 3. In all maturity models, KPAs must be assessed. For Stage 3, five maturity levels are proposed to assess the three KPAs. At Level 1, delivery is still at its lowest level of maturity and little technology is used. As the delivery matures in quality, additional leading practices are integrated until Level 5 (Neuhauser, 2004). This framework proposes that universities be at liberty to decide the level of maturity they are comfortable with. The five levels are explained more fully below.

Maturity Levels of the Maturity Assessment Framework for ODeL

Similar to OCDMM, this model consists of five levels, moving from Level 1 to Level 5. At Level 1, online discussions are led by lecturer/tutor who also generate discussion topics. At this level, students can slowly be introduced to this role on the LMS. The use of e-mail and phone as the only means of communication is acceptable at this level. At this level we propose that 50% of students' assessment should take place online (LMS) and the other 50% by paper and pencil. This percentage distribution is in line with Pinto's (2012) view. Maturity levels are assigned according to the distribution between online and conventional approaches. At a basic level, online approaches range from 0% to 33%. At the intermediate level, they range from 34% and 66%, while 67% to 100% is considered an advanced level.

At Level 2, online discussions are led by students who also generate discussion topics and facilitate these discussions. The use of social media tools such as *WhatsApp* and *Facebook* are introduced to complement e-mail and phone for announcements, notices, and issuing reports. At this level, assessment is 80% online and 20% paper and pencil, and students also engage in self-assessment.

At Level 3, the use of social media tools (e.g., *WhatsApp* and *Facebook*) are phased in to enhance teaching and learning. Students review one another's work online. Students are encouraged to suggest resources relevant to their topics, activities, and modules. Communities of learning are being formed.

By Level 4, **s**tudents are able to suggest Web links and other resources during their online discussions with the lecturers/tutors and among themselves. Different forms of assessment are introduced by the lecturers/tutors using all relevant technologies. Social media tools such as *WhatsApp* and *Facebook* are used to provide feedback and feedforward. Feedback is also shared online. Strong learning collaborations are evident at this level.

Finally, at Level 5, **s**tudents' and lecturers' collaborations are well established. The use of all the learning tools, including LMS, *WhatsApp, Facebook*, blogs, and podcasts are regular features in teaching and learning. Multiple online assessments are established and implemented, and assessment is fully online. Table 2 shows the five levels of our maturity assessment framework for ODeL.

Table 2

Maturity Assessment Framework for Open Distance E-Learning (MAFODeL)

Maturity levels	Use of LMS	Use of learning technological tools and applications	Online assessment via LMS
Level 1: Basic	Syllabus, course information, study material Online discussions led by lecturer/tutor	Use of e-mail and phone only as means of communication	50% online and 50% paper and pencil
Level 2: Novice	Online discussions led by students who also generate discussion topics and facilitate these discussions	Use of social media tools (e.g., *WhatsApp, Facebook, Twitter*) to complement e-mail and phone for communication only, not used for teaching and learning	80% online and 20% paper and pencil Students' self-assessment
Level 3: Intermediate	Lecturers' online facilitation is integrated with Web links and other references	Use of social media tools (e.g., *WhatsApp, Facebook, Twitter*) to enhance teaching and learning	Students review one another online
Level 4: Developing	Students are able to include Web links and other resources during their online discussions	Use of social media tools (e.g., *WhatsApp, Facebook, Twitter*) to provide feedback	Feedback and feedforward shared online
Level 5: Advanced	Students' and lecturers' learning collaborations are formed	Use of all the above tools including blogs and podcasts in teaching and learning	Feedback shared online on blogs and full online assessment

Methods

A qualitative methodology using semi-structured interviews and content analysis was employed. The population consisted of all the lecturers in UNISA's five colleges: (a) Education; (b) Human Sciences; (c) Economics and Management Sciences; (d) Science, Engineering, and Technology; and (e) Law. Combination of stratified and convenience sampling technique was used to select participants who could be easily approached. The stratified sampling technique was used to divide the population into colleges to form strata. These strata represented common characteristics among the population of lecturers in different colleges, including access to myUnisa and the library. According to Babbie (2016) stratified sampling addresses issues of representativeness in research whereby participants with similar characteristics are grouped together to help the researcher draw conclusions from different strata.

Participants gave informed consent before taking part in the study. The survey tool was sent to participants via e-mail. The survey consisted of four sets of questions that were aligned with the MAFODeL. The first three sets of questions were objective, requiring participants to answer yes, no, or sometimes. The fourth set consisted of open-ended questions asking participants whether the tools they use to support learning meet their module objectives. They were also requested to explain how they use the identified tools. Of the 30 surveys sent via e-mail, 12 were returned correctly filled out.

Data Analysis

A hybrid approach of deductive and inductive reasoning was used to analyse data. This approach was used to ensure that emerging themes were grounded in the MAFODeL. The analysis was conducted in two phases. In the first phase, responses for the first three sets of questions were collated per question on an Excel spreadsheet to find percentage responses. In the second phase, responses to the fourth set of questions were transcribed and thematic analysis (Braun & Clarke, 2006) was employed. Themes related to MAFODeL were coded into categories related to the concepts from this framework. These categories were grouped under the following headings: (a) myUnisa LMS activities; (b) technological devices and tools; (c) learning strategies; and (d) online assessment. Tables 1 to 3 represent data analysis for the first three sets of questions.

Table 3

Responses Regarding the Tools Used to Support Learning

Learning tools	Yes	No	Sometimes
myUnisa	83%	8%	8%
Web resources/links	42%	58%	0%
CDs	0%	100%	0%
Blogs	0%	82%	18%
WhatsApp	42%	42%	17%
Facebook	0%	82%	18%
Mobile phone	50%	25%	25%
E-mail	100%	0%	0%
Videos	42%	58%	0%
Podcasts	25%	58%	17%

Table 4

Responses Regarding Use of Online Teaching/Tutoring and Learning Strategies

Strategies	Yes	No	Sometimes	No answer
Online discussions are integrated with links	42%	25%	25%	8%
Online discussions are led by lecturer/tutor	100%	0%	0%	0%
Online discussions are led by students	0%	50%	50%	0%
Students are comfortable with the use of technology	25%	8%	67%	0%
Students generate discussion topics	8%	33%	58%	0%
Students facilitate discussions	17%	33%	50%	0%
Students online collaborations are satisfactory	8%	50%	42%	0%
Students suggest Web resources and links	0%	50%	33%	17%
Choice of Web-based learning resources is informed by students' preferences.	25%	42%	17%	17%

Table 5

Responses Regarding Use of Online Assessment Strategies

Strategies	Always	No	Sometimes	No answer
Online assessment	42%	25%	33%	-
Feedback is shared online	42%	8%	50%	-
Student online self-assessment	25%	17%	58%	-
Students review one another	8%	50%	33%	8%

Findings

The aim of this research was to assess and determine the maturity levels of lecturers' and tutors' explorations of various e-learning technologies within an ODeL environment. Although 83% of the survey respondents indicated that they use myUnisa, the responses from the open-ended questions showed that the announcements tool is the most frequently used on this LMS. Data also showed that most online discussions are initiated and led by tutors, with discussions rarely initiated by students. The survey indicated that less than half of the respondents use Web links, and students hardly ever provide links and other resources to maximise sources of information that can be shared amongst them. Among academics,

42% use Web links and videos, 25% use podcasts, and none use *Facebook*, blogs, or CDs. In addition, students' and lecturers' collaborations are yet to be developed or used within myUnisa. These findings corroborate Rhode et al.'s (2017) results which indicated that the announcement tool was the most frequently used LMS tool in a US university at 82.13%, and the tools used least were discussions (21.22%) and Web links (29.88%). When asked to explain how the tools they used support learning and teaching, two participants in the study replied:

> Yes, all of the myUnisa tools used in my modules support the objectives of the module. I use OERs, which give a more practical application for students compared to just the theory. Case studies are discussed in the discussion forums where students can answer and give their opinions on the case study so that the students can link this with the theory in the module. Students have Web links, for example the Website in their specific field and Unisa Library guide, where they can obtain extra resources on the module. The self-assessment tool is used by students to evaluate their knowledge on the content of the module but the self-assessments are not marked; this is only for self-study. Additional resources, for example a Powerpoint presentation and extra reading material are also available for students.

> Yes, the ones (myUnisa and e-mail) that I use are effective, especially with e-tutor discussions. I also use announcements on myUnisa regularly to keep my students abreast of any new developments. As explained above, the myUnisa tool is very effective, and the announcements feature is handy to clarify teaching and learning matters.

Although myUnisa is the main pillar of e-learning at UNISA, a small but significant percentage of respondents (8%) indicated that they sometimes use it while another 8% indicated that they do not use it, as evidenced by the comment "No, we do exercises and assignments in class." This response indicates that either some academics prefer physical tutorial support to myUnisa or they do not have access to it. There are also indications that the use of myUnisa and e-mail as learning tools may not be students' preference, as stated in these participants' comments:

> Yes we do, the only challenge is students are still lagging behind in using the named tools.

> Yes, some students benefit from such learning support tools. But there are those who for example, do not visit the announcement and/or discussion section on myUnisa, and thus they are not actively engaged in our discussions.

> While students do not participate optimally, those that do, do benefit significantly.

When asked whether they use e-mail as a tool to support learning, 100% of the respondents indicated that they do. This is supported by the interview data:

> I usually use these tools (myUnisa and e-mail) when I want to alert students on certain important information. After marking assignments, I usually give feedback to students using such tools.

> With regard to the use of e-mail, students mainly use it to query their marks, and not much about content.

When asked whether online discussions are led by tutors or students, 100% of the respondents indicated that discussions are led by tutors and none indicated that they are led by students.

The issue of student-directed discussion scored low among respondents. For example, only 8% indicated that students generate discussion topics, and when asked if students facilitate discussions using the mentioned electronic tools, only 17% replied affirmatively. As well, only 8% indicated that students' online collaboration is satisfactory. These scores indicate low characteristics of Level 2 and high characteristics of Level 1. Elements of MAFODeL that indicate higher levels of maturity in the use of e-tools, such as student self-assessment using the available tools, online feedback and feedforward, and online assessment together scored an average of 29%, indicating that the current methods and tools used are not yet developed to higher levels.

Data clearly indicate that e-learning tools are mainly stuck at the use of e-mail at 100% and sometimes phone at 50%. All respondents indicated that they do not use *Facebook*, CDs, or blogs to support learning. Much as social media and Web links, videos, and podcasts are available to support students, they scored a mere average of 36% indicating that their use is below average. This performance exhibits strong characteristics of Level 1 on the MAFODeL.

Discussion and Recommendations

Based on the results, the use of e-learning technologies and tools at UNISA is still at Level 1 (Basic) of MAFODeL. The results also depict weak characteristics of Level 2 (Novice) due to the low use of other communication technologies. According to Pinto (2012), maturity levels with percentages between 0% and 33% are considered basic. Even though myUnisa is the backbone of e-learning at the university, use of discussion forums is minimal. Students should be the focus of e-learning and support, therefore online discussions should be more amongst students than simply between students and the lecturer. The discussion tool should be used to deliver student-led activities and collaborations.

We recommend that other types of technologies be explored and adopted, as 100% use of myUnisa is unlikely. Cheaper options like CDs should be fully explored and social media should be adopted because these have great potential in enhancing learning.

Facilitating e-learning requires knowledge of appropriate pedagogical innovations. The literature has indicated that many e-learning facilitators hardly use pedagogies related to the technologies they use; instead they are comfortable with face-to-face methods. One participant in this study indicated that they do activities and assignments in class; this is surprising because UNISA is an ODeL institution and cannot accommodate all its students in classrooms. It is recommended that all UNISA lecturers and tutors be trained on the use of all myUnisa tools, modern e-learning technologies, and the application of relevant pedagogical approaches. myUnisa should be made available to all academics as a tool for learning and teaching not only for announcements.

The results also indicate that the choice of e-learning resources is not informed by students' preferences. Preferences can be influenced by issues of affordability, so this should be considered. Data also indicate

unsatisfactory levels of interaction and collaboration even though students are said to be comfortable with the use of technology. Makoe (2012) also found that UNISA students are comfortable with modern technology; generally, literature has shown that mobile phones have become ubiquitous tools for students. E-learning platforms are characterised as flexible, cost effective, collaborative, and allow better access to tutors and learning resources (Garrison, 2011; Pantaziz, 2002; Zhang & Nunamaker, 2003), so the University should take advantage of that.

Data show that assessment and feedback are rarely delivered online despite the fact that this facility is available. It is recommended that 50% of formative assessment be introduced online. The use of more available electronic tools will have to be encouraged and used frequently to support both learning and teaching.

Conclusion

The impact of ICTs and global trends have compelled many ODeL universities to adopt modern technologies to support students' learning. To a large extent, student support has evolved through three or four generations of DE. Understanding the maturity levels of academics' explorations and applications of various e-learning technologies to support students will help universities determine the level of their own e-learning maturity. Founded on leading principles in the literature (Neuhauser, 2004), the maturity assessment framework for open distance e-learning (MAFODeL) developed in this study assesses the maturity levels of academics' explorations and applications of e-learning technologies and strategies. This tool helps determine the ability, consistency, quality, and sustainability of e-learning. Constant assessment of e-learning maturity is therefore recommended and MAFODeL has been found useful in this regard.

In conclusion, given that no maturity assessment on e-learning has been conducted before at UNISA, this assessment can serve as a starting point for the university to measure improvements made in advancing e-learning activities. This research focused only on tutors and lecturers whose role it is to implement e-learning activities. It is hoped that this scope will be expanded to other stakeholders such as students and UNISA management in order to get a holistic maturity measure that will be based on the views and experience of all stakeholders.

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A Neo-Institutionalist Approach to Understanding Drivers of Quality Assurance in ODL: The Case of the Open University of Mauritius

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Abstract

In recent years, quality assurance (QA) in higher education has received increasing attention by academics, learners, institutions, and governments alike. Many open universities (OUs) have taken steps to re-define or re-orient their systems and practices to integrate quality. While there is a growing body of literature on QA best practices, there has been little investigation into the factors that influence institutions to improve or adopt QA and how these factors impact on the specific manifestations of institutional QA. This paper examines the challenges of QA implementation in OUs and, using a neo-institutionalist lens, it advances a framework for understanding drivers of institutional QA implementation. The framework is applied to the case of the Open University of Mauritius (OUM). Existing literature, institutional records, interviews and reports are analysed to assess how exogenous and endogenous factors have influenced QA implementation at OUM, with a focus on addressing the specificities of open and distance learning (ODL). A better understanding of the drivers of change for QA can help OUs plan the implementation of QA mechanisms in a more comprehensive way and to systematically develop a culture of quality that responds to the ideological and practical context of ODL.

Keywords: quality assurance, open and distance learning, higher education, neo-institutionalism, Mauritius, open universities

Introduction

In recent years, quality assurance (QA) in higher education has received increasing attention by academics, learners, institutions, and governments alike. Many open universities (OUs) have taken steps to re-define and re-orient their systems and practices to integrate quality. While there is a growing body of literature on QA best practices, there has been little investigation into the factors that influence institutions to improve or adopt QA and how these factors impact the specific manifestations of institutional QA. This paper examines the challenges of QA implementation in OUs and, using a neo-institutionalist lens, it advances a framework for understanding drivers of institutional QA implementation. The framework is applied to the case of the Open University of Mauritius (OUM). Existing literature, institutional records, interviews, and reports are analysed to assess how exogenous and endogenous factors have influenced QA implementation at OUM, with a focus on how the specificities of ODL have been addressed. A better understanding of the drivers of change for QA can help OUs plan the comprehensive implementation of QA mechanisms, and to systematically develop a culture of quality that responds to the ideological and practical context of open and distance learning (ODL).

Literature Review

Quality Assurance in Higher Education

In higher education (HE), QA refers to the policies, actions, standards, and procedures that enhance quality and meet predetermined quality criteria (Stella & Gnanam, 2004; Tait, 1997). The concept of QA has evolved from quality control (QC) in the manufacturing industry, from a retrospective perspective that verifies product quality, to a proactive one in which activities are deliberately undertaken to ensure that the product meets predetermined standards (Green, 1994). From the time of its introduction in HE, QA focused on inputs like enrolment, staff qualifications, and infrastructure. However, over the last few decades the focus has shifted to quality of learning and educational experience. Governments and stakeholders are requesting evidence of student participation, completion and attainment, and assessment. Suitability of graduates for the labour market is increasingly viewed as a measure of quality (Latchem & Jung, 2012). A modern challenge for QA is to demonstrate that graduates can thrive in a diverse and dynamic labour market (Organization for Economic Co-operation & Development, 2012).

Challenges facing open universities. OUs aim to break the "iron triangle" of access, cost, and quality that constrains traditional universities. In the iron triangle, traditional models of education cannot make improvements in one of the three sides without diminishing another (Daniel, 2009). It is envisioned that OUs can "reconfigure the access-quality-cost triangle...through the division of labour, specialization, and the economies of scale created by media and technology" (Daniel & Kanwar, 2008, p. 6). The agendas of OUs are fundamentally different from traditional universities in that they target underserved populations. Yet, despite fewer resources and the mandate to increase reach, OUs are expected to deliver the same certification, and undergo the same QA processes as conventional universities. This assumes that the accreditation, systems, and standards for conventional higher education institutions (HEIs) can (and should) be applied to OUs. While this application is intended to ensure quality, the concept of quality differs

between conventional institutions and OUs. Traditional conceptualisations of quality, based on "an insidious link between quality and exclusivity...[that] define[s] ... quality by the people they exclude" (Daniel, 2009, p. 2), are at odds with the OU agenda, which promotes openness and inclusivity.

Moreover, logistically, there are pedagogical, methodological, organisational, academic, and technical differences between ODL and traditional delivery. These differences include: geographic distance from the learner (Commonwealth of Learning [COL], 2004); less rigid admissions requirements (COL, 2004); involvement of different actors in development and delivery (COL, 2004; Roberts, 2018; Trindade, Carmo, & Bidarra, 2000); additional administrative tasks for ODL (Roberts, 2018); greater use of Web and ICT in ODL (Bates, 2000; Van Zyl, Els, & Blignaut, 2013); distinct academic workload models (Council on Higher Education, 2014); and more temporary staff at ODL institutions (Baumann, Shelley, Murphy, & White, 2008). These differences should inform QA approaches at an OU and may limit the applicability of conventional QA frameworks in the OU context.

QA in open universities. The specificities of ODL, both ideological and practical, mean that conventional QA frameworks may not be adequate for OUs; as a result, many OUs have adapted or developed their own frameworks, according to their distinct governance structures and cultural contexts (Kanwar & Clarke 2012).

While there are multiple frameworks implemented by OUs, a holistic QA framework for ODL (Figure 1) should include provisions on the inputs, processes, and outputs of an institution (COL and Asian Development Bank [ADB], 1999). At present, such a framework is not implemented consistently across OUs.

Figure 1. Quality assurance framework for ODL. Adapted from *Quality assurance in open and distance learning: Trainers' kit 005* (p. 82), by COL & ADB, 1999, Vancouver: COL. Copyright 1999 by Commonwealth of Learning.

The evolution of OUs and the diverse ways they attempt to address quality gives rise to multiple questions:

- Can a system built for traditional instruction assure quality of nontraditional providers? (Ashcroft & Rayner, 2011)
- Should national QA agencies apply the same sets of standards regardless of mode? (Latchem, 2016)
- How will OUs ensure quality higher education and fulfil their mandate to provide open education with 'limited' entry requirements?

Neo-institutionalist approaches to understanding QA. Over the past 20 years, neo-institutional theory has been increasingly applied to higher education research (Cai & Mehari, 2015). Neo-institutionalism explores how structures, norms, rules and cultures constrain or drive change. In neo-institutionalism, change may be driven by forces within an institution (endogenous drivers), or as a response to external factors (exogenous drivers). According to Palthe (2014), neo-institutionalism recognises the complexity of institutional change:

> [It] emphasizes the fact that not everything that happens is necessarily intended and that not all outcomes are the result of conscious and rational decision processes... external entities influence the creation and implementation of practices that come to attain a level of legitimacy. (p. 63)

Universities are susceptible to external pressures, such as regulatory, accreditation and legislative variables, which can impact their functioning (Ramirez & Christensen, 2013; Shattock, 2010). QA can be a means for governments to maintain control and, "ensures not only accountability, but can be used to encourage a degree of compliance to policy requirements or to control a burgeoning private sector" (Harvey & Newton, 2007, p. 225).

While neo-institutionalism has been critiqued for its "top-down" approach, modern theory demonstrates a burgeoning focus on the individual (Bitektine, 2011; Voronov & Vince, 2012). According to Wiseman and Chase-Mayoral (2013), "the ability to shift the discourse about neo-institutional theory from a largely macro-level framework to one capable of investigating educational changes occurring at the micro level is vital to understanding the comprehensiveness of national educational systems," (p. 101). While extrinsic forces may drive compliance, regulations may not be implemented if they are not accepted by staff. Similarly, internal processes may drive change independent from external actors. Parkes and Blewitt (2014) assert that "human praxis, interests, power dependencies and capacity for action are...important endogenous dynamics" (p. 7).

According to Palthe (2014), external regulative drivers are associated with rapid, episodic change, whereas intrinsic drivers result in longer-term change. However, Trow (1996) suggests that both can drive meaningful change, and universities may make changes both to improve their performance and to respond to evaluation criteria. Liu (2016) adds that institutions are more likely to meet external requirements when "the external norms of what constitutes good higher education... are compatible with the internal cultures" (p. 40).

Endogenous and exogenous drivers can be classified into regulative, normative, and cultural/cognitive social systems (Scott, 1995). Table 1, adapted from Scott (1995) and Palthe (2014), outlines a framework for understanding drivers of change, and is a heuristic for understanding QA adoption and implementation in HEIs.

Table 1

An Institutional Framework for Drivers of Change

	Regulative	Normative	Cultural cognitive
Exogenous	• National and international laws/policies/regulations	• Network ties • Resource dependency • Roles, habits, norms	• National and regional tradition/legacy of QA • Cultural systems, values, beliefs
Endogenous	• Institutional policy/ regulations	• Internal network ties • Internal dynamics and perception of/response to change	• Institutional legacy of QA • Institutional and individual identity and desire

Note. Adapted from *Institutions and organizations: Ideas and interests* (pp. 54-65), by W. R. Scott, 2008, Thousand Oaks, CA: Sage. Copyright 2008 by Sage Publications Inc., and "Regulative, normative, and cognitive elements of organizations: Implications for managing change," by J. Palthe, 2014, *Management and Organizational Studies*, *1*(2), p. 61. Copyright 2014 by the Sciedu Press.

Methodology

The present paper uses an explanatory case study method. The case study method is an empirical inquiry that investigates a phenomenon within its real-life context (Yin, 2014). The method has been selected based on the assumption that it can illuminate the decision-making process including why a decision was taken, how it was implemented, and with what results (Yin, 2014). While case studies are useful in providing an in-depth understanding of change processes, there are issues of external validity, and findings may not be generalizable to other cases or contexts, which are limitations of the present study (Yin, 2014). Similarly, construct validity may be problematic in this method. To address this concern, multiple evidence sources were used, and the report was reviewed by institutional representatives. Institutional approval to undertake and publish this study was sought and granted.

Qualitative document analysis was conducted. Bowen (2009) recommends an approach which excludes "the quantification typical of conventional mass media content analysis" instead consisting of "a first-pass document review, in which meaningful and relevant passages of text or other data are identified" and separated "from that which is not pertinent" (p. 32). Although qualitative document analysis has limitations, such as insufficient detail or biased selectivity, "given its efficiency and cost-effectiveness in particular, document analysis offers advantages that clearly outweigh the limitations" (p. 32).

Purposive and snowball sampling was used to select documents. The first document consulted was Patten and Chadee (2018), as it provided an overview of QA at OUM. A list of additional documents was generated based on the Patten and Chadee (2018) document and the literature review. Key documents selected for analysis were:

- OUM's Institutional QA Policy (2018a)
- OUM's Self Evaluation Report (2017b)
- Tertiary quality assurance (TEC) QA audit reports of OUM (2015 and 2018a)

To provide clarification on specific points in these documents, an email interview was conducted with a key informant, Professor Vinesh Sannassee, Director of Academic Affairs, who was selected purposively based on his central role in QA at the institution. After the respondent provided his informed consent, he was sent a list of questions and submitted his responses by email.

Using the "extraction approach" (Bowen, 2009) relevant information from the texts was extracted using a pre-established category system. The six categories were established a priori, based on the framework in Table 1: Endogenous regulative; endogenous normative; endogenous cultural-cognitive; exogenous regulative; exogenous normative; and exogenous cultural cognitive. Key words for each category were identified to guide the authors in the extraction, although authors also used their discretion to fit information into the categories. Extraction was conducted independently by two authors and categorised information was compared and collated.

Background: Overview of QA Milestones at OUM

OUM was established through the *Open University of Mauritius Act 2010* and opened in July 2012. The Mauritius College of the Air (MCA), established in 1971 to offer education through mass media and distance methods, was integrated into the new OU (Patten & Chadee, 2018). Since its inception, OUM has built on its inheritance of distance learning from MCA, offering nearly all its courses in blended mode (Open University of Mauritius, 2018b). As the only OU in the country, OUM has a distinct role within the HE landscape, providing undergraduate, professional and applied programmes to more than 5,000 students (Patten & Chadhee, 2018). As a public HEI, OUM's operational guidelines were developed according to statutory/regulatory requirements and directives from various authorities, namely the Ministry of Education and Human Resources, Tertiary Education and Scientific Research (MoE), Tertiary Education Commission (TEC), Ministry of Civil Service Affairs (MoCSA), Pay Research Bureau (PRB), and Ministry of Finance and Economic Development (MoFED). The QA instrument used at OUM, ISO9001, was introduced in 2014. OUM adopted the plan-do-check-act cycle of ISO9001 (Deming, 1993; OUM, 2018a). OUM developed its *Quality Policy Manual* (2015; 2018a) for the University, and all staff was trained on ISO9001 and internal quality audit practices (Patten & Chadee, 2018). Yearly external audits were conducted to assess compliance to objectives and measure improvements. All processes at OUM were documented and led to the organisation of units/divisions. As a result, OUM became the first ISO-certified HEI in Mauritius in July, 2015.

The TEC carried out the OUM's first QA audit in 2015, resulting in several recommendations. Following the audit, OUM sought to address these recommendations (Patten & Chadee, 2018). It developed a new strategic plan for 2017-2025, which reiterated the "fitness for purpose" objective in its vision and mission (OUM, 2018a). In 2017, the Commonwealth of Learning (COL) assisted OUM in its *Self-Evaluation*

Report (2017b); *QA Policy* (2018a); and other documents in preparation for the upcoming TEC audit. In April 2018, the QA policy was approved and communicated to staff. The implementation plan was circulated to heads of divisions/units in July 2018. In March 2018, the first cycle audit was conducted by TEC. COL is currently supporting OUM in addressing recommendations from the 2018 audit, including an academic workload model. Table 2 summarises QA milestones at OUM from 2010 to 2018.

Table 2

QA Milestones at OUM: 2010-2018

Year (Month)	Event
2010	Open University of Mauritius Act
2012	OUM opened
2014	ISO introduced
2015 (July)	ISO certification
2015 (October)	TEC audit
2017 (July)	*Strategic Plan, 2017-2025*
2017 (November)	*Self-Evaluation Report; QA Policy; Implementation and Monitoring Plans*
2018 (March)	TEC audit
2018 (April)	**QA Policy** approved
2018 (July)	Implementation plan circulated; Identification of areas for support as per TEC recommendations

Discussion

Exogenous Drivers of QA Adoption at OUM

Exogenous regulative drivers. The extrinsic regulative factors that shaped OUM from its inception are important drivers of QA. As a public institution, OUM must conform to statutory and regulatory directives issued by numerous external bodies. OUM must adhere to a variety of frameworks and guidelines related to human resources and pay structure set out by the PRB. The 2016 PRB report on OUM aims to, "further consolidat[e] the existing structure to enable the organisation to meet its objectives... [and to] provid[e] specific incentives and conditions of service in line with what prevail in other public universities" (recommendation 62.4, p. 367), recommending "consistency and uniformity across the Public Sector" (p. 73). However, while the PRB aims to ensure consistency, the academic workload models for ODL are fundamentally different from those of conventional universities and necessitate a distinct approach to organisational structure, and financial and human resource management. The required positions, profiles, and workloads of OU staff and faculty differ from those of a conventional institution. This may pose problems in defining positions, schemes of service and pay grades that are consistent with other public HEIs. According to Patten and Chadee (2018) external schemes of service constrain human resource management. They note that external requirements make recruitment complex and time consuming. The

2016 PRB report also acknowledged delays in the approval process (p. 73). Consequently, OUM has several empty posts, creating a barrier to QA implementation (Patten & Chadee, 2018).

The TEC is responsible for QA guidelines, self-assessment audits and academic audits in Mauritius. All HEIs are required to submit self-evaluation reports and undergo quality audits on a five-year cycle (Tertiary Education Commission [TEC], 2017). OUM must meet the indicators and criteria, designed for conventional universities, outlined in TEC's *Quality Audit Handbook for Tertiary Education Institutions* (TEC, 2010). In October 2015 the TEC conducted a review of the newly established OUM. It was in anticipation of this review that OUM introduced ISO9001 (Patten & Chadee, 2018). Furthermore, the recommendations of the review drove subsequent action. While the 2015 report commended OUM for the ISO standard, it noted that "relying on the ISO procedures is not adequate for assuring quality at the University (p. 21)," stating that "there is need for a quality assurance structure with clear processes" (p. 21). According to Patten and Chadee (2018), these recommendations spurred OUM to develop the *Self Evaluation Report* in 2017 and the institutional QA policy. With a second audit on the horizon in 2018, these documents also addressed the criteria of the impending TEC review.

While the 2015 TEC report considers many specificities of ODL, it also highlights the tension between quality (defined by traditional models) and access (a mandate of OUs). The report commends OUM for "meet[ing] the objective to open access to learners (p. 5)," but notes that "academic entrance requirements are sometimes lower than for conventional universities (p. 5)" which they urge should "not deflect OU from providing an education...that is relevant and of high quality, so that the learners are at par with learners of other universities," (TEC, 2015, p. 5). The implication is that by widening access, or making entrance less exclusive, OUM may jeopardize quality, reflecting the iron triangle in which increased access results in decreased quality. However, as Daniel (2009) asserts, this tension results from the association of quality with exclusivity, common in conventional systems. The 2018 TEC audit recognises this tension, suggesting that "increased access has to be considered in its relationship to cost and quality" (TEC 2018a, p. 8). However, rather than suggest stricter entry requirements, they encourage OUM to clarify its pedagogical and learner support models, particularly as they expand. This demonstrates a positive evolution in the recognition of the distinct OU context and promotes alignment of QA with the mission of open education.

Exogenous normative drivers. Resource dependency is an important exogenous driver of QA at OUM. Unlike regulative factors, resource dependency spurs QA implementation out of perceived necessity rather than enforcement (Palthe, 2014). Like other HEIs in the country, OUM relies on the MoE for funding. In 2017/2018, OUM received approximately 28 million Rs- around 5,600 Rs per student—which is low compared to 640 million Rs – around 58,000 Rs per student - for the largest public university in Mauritius (Ministry of Finance & Economic Development, Government of Mauritius, 2018). Within the iron triangle, the tension between cost, quality, and access is exacerbated by resource scarcity. Outside of the government funding that they receive, OUM depends on student fees, consultancies, and industry collaborations for revenue (OUM, 2017a). According to Patten and Chadee (2018) OUM is pursuing, "alternative ...funding since the government grant for the institution has decreased considerably" (p. 15). The TEC 2018 report (TEC, 2018a) highlights that OUM must develop new funding strategies, particularly as the institution expands. This is echoed in OUM's strategic plan (OUM, 2017a). In addition to short courses, OUM is collaborating with partners to offer programmes targeting healthcare professionals (OUM, 2017a). OUM

also plans to open six regional centres across Africa (OUM, 2017a). These initiatives will help to ensure the sustainability of OUM in a resource scarce environment, while expanding its reach.

Due to resource scarcity, OUM must appease not only the TEC (by meeting its regulative requirements), but also attract and retain students. While ISO9001 helped OUM address the requirements of the TEC, it is also a powerful marketing tool, which projects an image of quality. According to Patten and Chadee (2018), the ISO9001 certification is a "marketing advantage...since [OUM] is the only public university which is ISO-certified" (p. 10). The certification is advertised to prospective learners throughout OUM's website and marketing materials (OUM, 2018b). In a competitive market, the adoption of QA measures can demonstrate comparative advantage.

While resource scarcity may drive QA implementation, it can also impede it. Patten and Chadee (2018) note that OUM, "requires continuous investment in modern ICT infrastructure, website, learner platform and software to ensure quality service to learners since the University offers courses in ODL mode" (p. 12). While ODL offers cost advantages in economies of scale, initial technology and infrastructure investments can be high (Daniel, 2009). Yet, this investment is necessary to achieve the advantages of economy of scale. OUM is faced with managing the significant investments required to scale-up, in an environment of declining public investment, and increased competition.

Exogenous cultural/cognitive drivers. National culture is another factor driving QA implementation at OUM. In 2006, the Government of Mauritius made significant strides to solidify its reputation as a continental leader in education, announcing plans to position itself as a knowledge hub. A feature of this plan was tertiary education:

> If Mauritius wants to position itself as a knowledge hub and as a key player in the Region, considerable emphasis should be laid on the postsecondary education sector, making it of a world class status. (Human Resource Development Council, 2006, p. 10)

Government investment and planning are driven by this ambitious agenda. According to Bailey, Cloete, and Pillay (2011), higher education features strongly in the national development plan of Mauritius. These plans create an environment in which quality is linked to national identity.

Cultural/cognitive drivers also impact the regulative environment through the establishment of various governing bodies. The TEC's regulatory framework was developed to align with the national plan to position Mauritius "as a world-class Knowledge Hub and the gateway for post-secondary education" (TEC, 2018b, para. 2). National culture creates an environment wherein the public expects high quality education. In a resource scarce environment, HEIs must prove that they can deliver quality education in line with the national vision; otherwise, they will not attract learners and the much-needed revenue. Thus, a national culture of quality is not only a reflection of public demand for continuous improvement, but also drives this demand (Ardi, Hidayatno, & Zagloel, 2012; Doval & Bondrea, 2011).

Endogenous Drivers of QA Adoption at OUM

Endogenous regulative drivers. While institutional QA adoption may be driven by exogenous factors, implementation occurs at the micro-level of praxis. The ISO9001standards used by OUM as their

guiding framework act as an internal regulative driver of QA. According to Patten and Chadee (2018) "The ISO certification defines the procedures used by Administration. In line with the ISO procedures, a step-by-step process is used at all levels of administration" (p. 3).

While ISO9001 provides a broad framework for quality management, studies have highlighted gaps when applying it to higher education, which may limit its efficacy (Becket & Brookes, 2008; El Abbadi, Bouayad, & Lamrini, 2011). One critique is that ISO9001 focuses on services, rather than functions like research, teaching and learning, positioning the learner as the "client," rather than the "product." This separates quality management from outcomes, such as employability and improved livelihoods.

OUM's "fit for purpose" QA policy was developed in consultation with heads of divisions/units in 2017 and serves as an internal regulative document (OUM, 2018a). The policy is tailored to the ODL context stating that it "should be seen within the context of strengthening internal quality controls by developing more explicit measures to assure the quality of ODL" (OUM, 2018a, p. 2). The policy addresses salient features of ODL, such as technology, learner support systems, and pedagogical models. Patten and Chadee (2018) note that the policy, besides addressing TEC recommendations, is a regulative force and that "all staff will have to imperatively work towards these policies" (p. 13). While not all policy translates into praxis, OUM has taken concrete steps to ensure that staff members address the aims of the policy. An implementation plan was developed and circulated to head of divisions/units in July 2018. Additionally, a methodology for evaluating the policy strengthens its efficacy by outlining clear monitoring and accountability mechanisms.

Endogenous normative drivers. Daft (2006) suggests that the role of leadership in organisational change is crucial; claiming that implementation of institutional QA requires continuous support from leaders through ongoing consultations and communication with staff. According to Patten and Chadee (2018), "there is commitment at leadership level regarding quality assurance (p. 13)" and OUM management supports the implementation of QA activities. They note that "this has led to the organization of workshops and the [QA] policy document has been approved for implementation" (p. 13). The TEC 2018 report commends OUM for involving staff in the development of the institutional mission, aims, and objectives, which has led to ownership for the plan and its implementation.

However, inadequate human resources in key positions may have a negative impact on leadership for QA. According to Patten and Chadee (2018), staffing in the QA division is a challenge, and a crucial position (Director of Quality Assurance) remains vacant. Other vacant posts, including the Director of Academic Affairs Division and Director ICT, create a leadership vacuum, which can adversely affect QA (TEC, 2018a). Patten and Chadee (2018) note that expertise in QA is scarce in Mauritius and staff have limited opportunities for exposure, further limiting leadership.

Endogenous cultural/cognitive drivers. The OUM vision and mission are: "To be among the best open universities in the world; and, to use technology and flexible mode of teaching to serve society, transform lives, and make high-quality education, lifelong learning, and training accessible to everyone while promoting excellence in research" (OUM, 2017a) These statements establish the importance of quality and lay out the fitness for purpose objectives, which are the crux of OUM's QA approach. They also link the institution's identity to its quality agenda. As previously noted, staff at all levels was involved in the

development of the University's mission, aims, and objectives, and have participated in QA workshops, which has helped foster a culture of quality.

From its outset, the QMS at OUM included all divisions/units (Patten & Chadee, 2018); in 2014, staff was trained on ISO9001 standards and internal quality audit practices (OUM, 2017b). The 2015 TEC audit confirmed this, stating that "ISO procedures have been well accepted among the staff," a conclusion echoed in the 2018 report (TEC, 2015, p. 21). QA has thus been mainstreamed amongst staff, creating a pervasive culture, rather than isolated pockets, of quality. The inclusive approach strengthens the culture of quality, emphasising personal responsibility for QA.

Despite the acceptance of QA and the ISO framework in principle, at OUM "it is often a challenge to get involvement [in QA] at all levels ... [QA] is often perceived as additional work and there is, in some cases, resistance to change," (Patten & Chadee, 2018, p. 13). According to Daft (2006) how staff interprets QA documents is a challenge, particularly when there is ambiguity. While ISO9001 offers a broad framework, "the processes themselves are defined by OUM" (V. Sannasee, personal communication, December 11, 2018). According to the 2018 TEC report, despite the acceptance of ISO9001 principles "there was no formal quality assurance framework in place" at OUM (p. 29). Thus, the ISO9001 standards must be translated into a practical framework that is well understood and easily implemented by staff. Figure 2 illustrates the relationships between various drivers of QA at OUM.

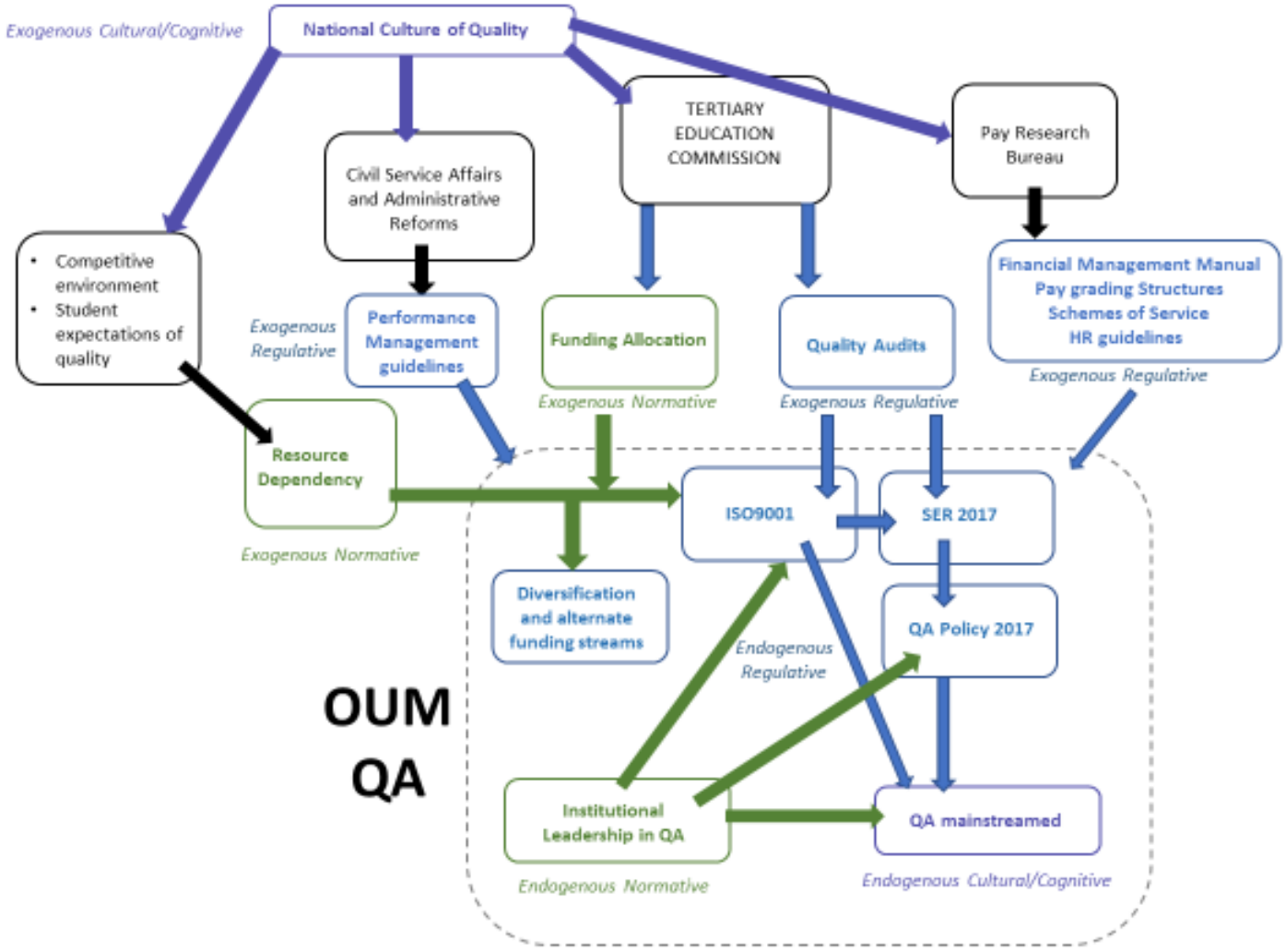

Figure 2. Endogenous and exogenous drivers of QA at OUM.

Lessons Learnt

Based on the analysis presented and the review of literature the authors raise the following observations and recommendations.

- Exogenous. Regulative drivers. A challenge in implementing QA at OUM is that external bodies, such as the PRB and TEC, have requirements or guidelines that do not fully align with the OU context. To support QA of ODL institutions, the authors recommend that national QA frameworks span the range of delivery methods, including flexible guidelines that can accommodate individual institutional solutions. According to Woodhouse (2006), criteria for judging inputs and processes and their correlation with quality outcomes are similar in both face-to-face and ODL programmes; however, because people and resources are dispersed or online, different questions and enquiry

methods to assess quality may be necessary in an OU. A separate set of instruments to accredit ODL programs should be developed and form part of the requirements of national qualification agencies. As per Liu's recommendation (2016), ensuring that national frameworks are compatible with institutional praxis helps align endogenous and exogenous forces, increasing the likelihood of adoption.

- Exogenous. Normative drivers. As government investment in tertiary education declines, outcomes-based QA measures will be essential for OUs to attract learners. Resource dependency means that OUs must be more accountable to society and responsive to the labour market. OUs should align curriculum with labour market needs and competencies to increase graduate employability. Moreover, it will be increasingly important for institutions to involve learners in quality processes. For example, learner feedback can be facilitated by technology, such as social media review systems. In a competitive market with decreasing funding, OUs must have plans for alternate funding and seek innovative ways to ensure that they meet stakeholders' expectations.

- Endogenous. Regulative drivers. The alignment of internal regulative QA frameworks to the specificities of ODL must be considered. The ISO9001 standards are not designed specifically for quality management in HE. The recently developed ISO21001 standards for educational management systems may be a more appropriate tool for QA in open universities and should be assessed and adapted for the OU context, considering the specificities of ODL. Internal regulative frameworks should also address emerging technologies. Increasingly, OUs are taking up open educational resources (OER), MOOCs, and open platforms for publications. The characteristics of these open tools must be recognised in institutional quality systems. Innovations pertinent to the future of OUs must be addressed within QA policies and frameworks, so that internal regulative drivers of QA are relevant to the evolving landscape of ODL.

- Endogenous. Normative and cultural/cognitive drivers. Koul and Kanwar (2006) describe a *culture of quality* as an institutional culture that promotes the introduction of an internal QA system and its ownership at all levels, values capacity building, stresses accountability to stakeholders, and focuses on learning rather than instruction. Kanwar (2013) highlights the difficulty in creating a culture of quality through a top-down process. The responsibility of quality must be close to the department/unit responsible for particular functions and leadership in QA must be fostered at all levels. This can be achieved by the setting-up of QA committees at several levels, with reporting lines to monitor and evaluate QA. Awareness workshops for staff should be conducted frequently to promote understanding and ownership of QA. At OUM, the involvement of staff in the creation of the vision and mission, regular capacity-building workshops, and the dissemination of QA documents are examples of inculcating a culture of quality. However, specific efforts should be made to ensure frameworks align with the realities of ODL. An important step will be for OUM to clarify the on-the-ground practices associated with their QA policies and frameworks, and to incentivize implementation amongst staff. Additionally, ODL institutions will benefit from dedicated, well-staffed QA units, with the leadership and skills to implement the QA agenda. Recruitment of leadership positions will be essential for providing strategic direction in QA.

Conclusion

Both internal and external forces influence the adoption of QA measures at OUs and determine whether adoption is for the sake of compliance, for improvement, or for both. Since its inception, OUM has undertaken multiple interventions in QA, driven by both endogenous and exogenous factors. These include extrinsic factors such as: requirements/directives of government bodies and institutional regulations; normative forces like resource dependency and institutional mission and mandate; and cultural/cognitive factors such as a national culture of quality, and institutional leadership and legacies. While these drivers have facilitated QA implementation at OUM, the analysis reveals gaps and tensions, particularly in terms of the applicability of regulations and processes to the OU context, as well as a lack of resources, capacity, and buy-in, which may act as barriers to effective implementation. The forthcoming *Higher Education Act*, which provides for a Quality Assurance Authority to ensure QA aligns with international standards, enhance QA mechanisms, and promote good practices, will undoubtedly impact QA in Mauritius. This exogenous, regulative force will likely drive QA interventions at OUM, which will need to comply with these enhanced standards. While institutions have little control over their exogenous environment, they can determine their reaction to external forces and pressures. Moreover, institutions can drive QA adoption and improvement through endogenous regulative, normative, and cultural/cognitive mechanisms. Internally, the development of QA policies and plans, together with the ISO9001, has helped to inculcate a culture of quality at OUM. To move beyond a compliance approach, the continued involvement of all staff will be crucial. To meet the dynamic needs of a sector increasingly shaped by technological innovation, innovation in QA for higher education is essential. This will require the involvement of diverse stakeholders, and a re-thinking of traditional roles and responses. A culture of quality relates to a culture of care, and such a culture must look beyond compliance and aim for improvement.

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Distance Education and the Open University of Brazil: History, Structure, and Challenges

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Abstract

Correspondence courses have been offered in Brazil since the late 19th century; in the 20th century, instructional media such as radio and television were successfully used long before the introduction of the Internet. However, distance education (DE) was officially established in Brazil only in 1996 by the National Educational Law of Policies and Bases. Several censuses conducted by the Brazilian Ministry of Education and the Brazilian Association of Distance Education (ABED) collected statistics on the number of institutions and students involved in DE in Brazil. Although higher education DE has developed in the country since then, several attempts to create an Open University failed. The institution that is now The Open University of Brazil (UAB), created in 2005, focused mainly on teacher education. However, it is not a new institution (but rather a system of older institutions). It is neither a university (but rather a consortium of public federal, state, and municipal face-to-face educational institutions), nor open (candidates should have at least finished high school and are required to pass a rigorous entrance exam). Although UAB certainly contributed to the progress of DE in Brazil, it faces many challenges and problems, such as the continuously questioned quality of its learning support centers, labor relations, issues related to hiring face-to-face and online tutors, and the structure and organization of producing content for courses. This article presents a brief history and the main characteristics of DE in Brazil, details UAB's structure, and discusses the challenges it faces.

Keywords: distance education, higher education, learning centers, tutoring, Brazil

Introduction

When the development of distance education (DE) in Brazil is compared with experiences elsewhere in the world, some similarities and differences are apparent. Brazilian DE followed the international movement, with correspondence courses offered by private international correspondence schools in the late 19th century. Later, media such as radio and television were used successfully, through specific and often creative solutions, long before the introduction of the Internet. However, when The Open University of Brazil (UAB) was officially established in 2006 through Decree 5,800, Brazil became the last nation with population of over 100,000,000 people to create an open university (Litto, 2018, p. 31).

The evolution and application of information and communication technologies (ICT) naturally contributed to the development of distance education in Brazil. Besides the expansion of learning management systems (LMS), different media have been incorporated into DE including, among others (a) printed material, (b) radio and TV, (c) e-mail and discussion lists, (d) videos, (e) video and Web conferences, (f) social networks, (g) blogs, and (h) podcasts. A myriad of tools and resources are now available to institutions, managers, teachers, and students, enabling different types of interaction and communication (synchronous and asynchronous), often supported by face-to-face learning centers, allowing ICT to reach the most remote regions in Brazil.

This article presents an overview of the characteristics of distance education in Brazil, describes the structure of The Open University of Brazil, and discusses some of the challenges it faces. This paper is based on a review of the literature and legislative documents as well as the close experience of one of the authors as a long-time employee in the Brazilian Ministry of Education.

Distance Education in Brazil

In 1996, Article 80 of the National Educational Law of Policies and Bases officially introduced distance education in Brazil. It was not until 2005, however, that Decree 5,622 started regulating distance education there. At time of writing, the updated document is Decree 9,057 (Presidency of the Brazilian Republic, 2017).

Distance education in Brazil did not focus on primary education, due to strong resistance on the part of many educators, politicians, and society in general. Brazil does not have a tradition of homeschooling, which might at least partially explain this resistance. However, the development of DE has been noteworthy in professional education (Porto & Berge, 2008) and especially higher education.

In the last two decades, the importance of distance education in higher education in Brazil has been reflected in, among other aspects, an increasing number of enrolment spaces offered to DE students. In the 2018 Census of Higher Education (National Institute of Educational Studies and Research [INEP], 2018), more than 8 million undergraduate spaces were offered, of which 67% were face-to-face and 33% in distance education. In addition, between 2007 and 2017, the number of admissions varied positively, with 19% in face-to-face courses and more than three times that (226%) in DE courses; during the same period, enrollment (including students already admitted) in DE increased by 375.2%, while face-to-face increased only 33.8%. Although the percentage of students attending DE courses in 2007 was 15.4%, in 2017 that share was about 33%. The increase in the number of students in higher education in Brazil between 2016 and 2017 was mainly due to DE, which had a positive variation of 27.3%, while face-to-

face courses increased only 0.5%; in the same period, the number of enrollments in face-to-face courses decreased by 0.4%, while enrolment in DE courses increased 17.6%, the highest percentage recorded since 2008.

It is important to note that from 2007 to 2017, the private sector was responsible for offering 91% of these DE spaces, while federal higher education institutions were responsible for 59% of the public offerings. In 2017, 86,965 students were admitted to DE by public institutions, while 986,532 were by private institutions. However, there has been concern regarding several issues, such as the infrastructure needed to support the DE model, governmental requirements for face-to-face learning centers (even for models that do not need this structure), the precariousness of teaching work conditions, text material produced to the detriment of other didactic media, among other aspects.

In addition, there has been skepticism about the organizational model for distance education at higher education institutions in the federal public education system, especially those related to UAB, analyzed in the next section.

Open Education in Brazil

This section starts with a description of the evolution of the open education movement in Brazil. In 1989, Professor Fredric Litto was the founder and scientific coordinator of the School of the Future, a laboratory of the University of São Paulo, investigating how new information and communication technologies could support education In 1995, Litto requested a grant from American Telephone & Telegraph to create a Brazilian student virtual library (BibVirt), a digital collection of texts, videos, images, and sounds, in the public domain, suitable to provide young people with varied content for their research and essays. BibVirt began operating in 1997, hosted on USP servers and entirely free for queries and downloads. It came to have more than 10,000 works, videos, and sound records, with more than 20,000 individual inquiries per day. BibVirt is currently not available at its original address, though much content that it has prepared and offered to the public is available in newer collections (Litto & Mattar, 2017). The Brazilian Association of Distance Education (ABED) also recognized the importance of OER, and was among the first signatories of the Cape Town Open Education Declaration in January 2007 (www.capetowndeclaration.org/).

Amiel, Gonsales, and Sebriam (2018) presented a brief history and a detailed overview of the activity regarding OER in Brazil during the last decade. While in other countries there are specific funding sources and ongoing support for OER projects and actions, in Brazil foundations and funders have yet to pay sufficient attention to this area. The National Plan of Education (Brazilian Ministry of Education, 2014), however, emphasized the importance of open educational resources to foster the quality of primary education. In addition, in 2015 the Federal University of Paraná (UFPR) instituted the program called REA Paraná (OER Paraná, a Brazilian State), the first institutional policy of a Brazilian university to support the promotion and provision of OER through a teacher bonus. OER published in the UFPR Institutional Repository add 25% to a teacher's score for promotion and progression. The main goal of the project has been to disseminate open educational practices and encourage the production and sharing of OER via a digital repository. The program, which started as a partnership, has been extended to include other institutions in the region. Essential books on OER have also been published in Brazil (Okada, 2013; Santana, Rossini, & Pretto, 2012; Santos, 2013; Sebriam, Markun, & Gonsales, 2017), as well as articles, dissertations and theses, and initiatives such as Iniciativa Educação Aberta (Open

Education Initiative; https://aberta.org.br/), which unites the efforts of the UNESCO Chair in Open Education and Instituto Educadigital.

Open University of Brazil (UAB)

For decades, attempts to create an open university in Brazil failed. For example, in 1972, two years after the foundation of the United Kingdom Open University (UKOU), the Brazilian government sent a group of educators to England, who produced a reactionary and negative report.

In the middle of 2005, there were discussions about creating The Open University of Brazil system under the responsibility of public higher education institutions. The goal was to bring high quality, public higher education to Brazilian counties that did not offer higher education or offered it to an insufficient degree, as less than half of Brazilian municipalities had any institution of higher education (Litto, 2018, p. 32). As Tait (2008) suggested, one purpose of open universities is to fulfill the function of "nation-building—where a national university, as opposed to private, confessional or regional universities, need in the government's view to support national development" (p. 92).

Decree 5,800 was approved on June 8, 2006, creating the UAB system. The decree established that one or more public institutions of higher education might offer a course at a distance, with students attending in face-to-face learning centers (see Figure 1).

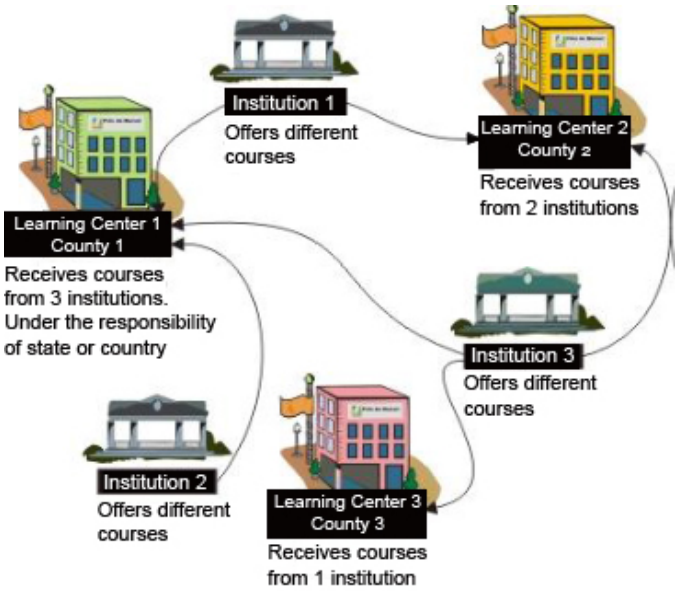

Figure 1. Structure of The Open University of Brazil. Adapted from "Panorama geral da Universidade Aberta do Brasil," by C. J. Costa, 2009 (http://portal.mec.gov.br/index.php?option=com_docman&view=download&alias=1903-celso-jose-costa&category_slug=novembro-2009-pdf&Itemid=30192). Copyright 2009 by C. J. Costa.

Designing the UAB System

According to Costa (2007), Brazil's Ministry of Education (MEC) considered four innovative projects in the Brazilian public sector for designing the UAB system: (a) in 1996, the *Pedagogy* course at the state of Mato Grosso Federal University; (b) in 2000, the CEDERJ consortium in the state of Rio de Janeiro; (c) in 2002, the Veredas project in the state of Minas Gerais; and (d) in 2006, the pilot project *Administration* course of the Bank of Brazil. MEC also researched models from other countries,

including the UKOU and the National Distance Education University (UNED) in Spain. The design of the UAB model with face-to-face learning centers followed the experience of the Foundation Center for Science and Higher Distance Education of the state of Rio de Janeiro (CECIERJ), created in 2002.

According to Ricardo (2012, p. 53), examination of the UNED model of DE inspired the structure of the CEDERJ consortium.

> One of the issues that needs to be elucidated regarding CEDERJ is its specificities that are entirely different from traditional institutions of DE. Universities such as UNED and UKOU, created following the logic of distance education directed to the masses, with the operationalization of DE in the industrial format, had their instructors involved in the development of their proposals. While UNED was born as a distance learning institution, the consortium began as an interinstitutional collaboration, without its dedicated full-time instructors to DE so that they can research, create new methodologies and, at the same time, are integrated into processes of continual professional development. (Ricardo, 2012, p. 225)

The organization of the UAB system, which initially had budgetary aid from the Brazilian National Development Bank, took place through public calls. The first known public call, published on December 20, 2005, followed a pilot project. Other calls were then published in 2011, 2014, and 2018. These involved the integration and articulation of proposals for courses presented exclusively by federal higher education institutions and proposals for face-to-face learning centers presented by the states and counties. As a result, UAB has been characterized as not a university, but rather a system of public universities and similar educational institutions aiming to provide courses in a DE format to students having difficulty entering higher education. However, it is a mandatory requirement that the Brazilian Ministry of Education accredits the public institutions of higher education that aim to participate in the UAB system.

In this sense, the UAB system was designed to foster the articulation, interaction, and implementation of initiatives, thus stimulating a partnership among the three levels of government (federal, state, and municipal) with public universities and other interested organizations. The intention was to provide alternative mechanisms for the design and delivery of undergraduate and graduate courses in a consortium model. K to 12 teachers were to have priority in attending courses, followed by K to 12 administrators and others working at public institutions.

According to CAPES, the Brazilian Coordination for the Improvement of Higher Education Personnel agency (2019), a foundation linked to MEC that coordinates post-graduate studies, in the first four months of 2018 the UAB system included 109 public institutions of higher education offering about 800 courses and 771 face-to-face learning centers. The system is maintained in collaboration with states and, especially, local counties. These learning centers guarantee academic, technological, and administrative support to teaching and learning activities. However, the federal government does not fully support these learning centers, which must therefore rely on the financial and political situations of their municipalities. Aretio (2016) pointed to a similar problem with UNED's learning centers; it was thought that financing these centers was to be entirely supported by local or regional entities (e.g., municipalities, county councils, banks). The official funding for UNED was so scarce that it was difficult to cover the expenses of the headquarters itself. Naturally, it was challenging to create this financing by the entities around the center. The UAB public call announced in May, 2018 significantly increased the

size of the system with new units from the Federal Institutes (IF), as well as the accreditation of new municipal, state, or federal learning centers on university or IF campuses.

Among the courses offered by UAB in the blended modality are the professional (or non-thesis) master's degree; currently, there are 16 such programs, called Professional Master's Programs for Qualification of Teachers of the Public Primary Education Network (PROEB). PROEB's objective is to improve the quality of teaching in K to 12 public education. Teachers at public pre-university education institutions who are active in the classroom during the entire period of the course can enroll in one of the professional master's courses at no cost.

The UAB system uses DE to reach different regions of the country, intentionally blending the experiences of UNED and UKOU in its organizational model in the following aspects: (a) learning centers (Aretio, 2006, 2016; Tait, 2003); (b) mass production of course content, as with Aretio (2006, 2016) who stressed planning the study structure and writing of teaching units at UNED; (c) training; and (d) consortium of inter-institutional collaboration. Today, UAB serves all regions of Brazil (Figure 2).

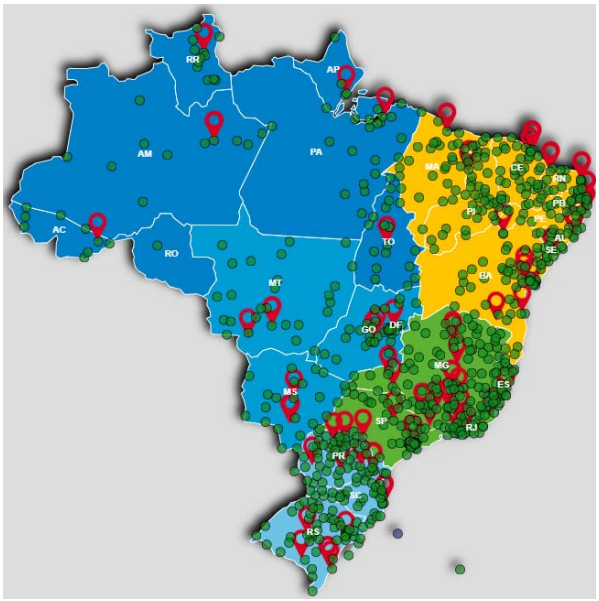

Figure 2. Distribution of UAB's institutions and face-to-face learning centers. Reprinted from "SiSUAB2," by CAPES, the Brazilian Coordination for the Improvement of Higher Education Personnel Agency, 2019 (https://sisuab2.capes.gov.br/sisuab2/login.xhtml). Copyright 2019 by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior.

Figure 2 shows that the courses offered by UAB are distributed throughout the country, totaling 649 local sponsors of active support centers in the five regions of Brazil. There are 669 active learning centers that offer distance courses in the country's regions (green circles). This data collection did not include learning centers that were either disconnected, inactive, provisional, pending, or unapproved. The data shows than the southeast region has the highest concentration of active learning centers, followed by the northern and southern regions, respectively. There are 128 institutions (red circles) from different administrative units (federal, state, and municipal) serving these regions.

These data parallel that from the Teaching Development and Information and Communication Technologies group that has studied UAB since 2011. This group's research project aims to provide increasingly open data about UAB that can be useful to both researchers and the public. The UNESCO Chair in Open Education at State University of Campinas conducted the mapping project in partnership with the Faculty of Education at the University of Brasília, with support from the Directory of Distance Education (DED) and the Brazilian Coordination for the Improvement of Higher Education Personnel agency (CAPES) Distance Education Board. Figure 3 indicates the number of learning centers per state in Brazil.

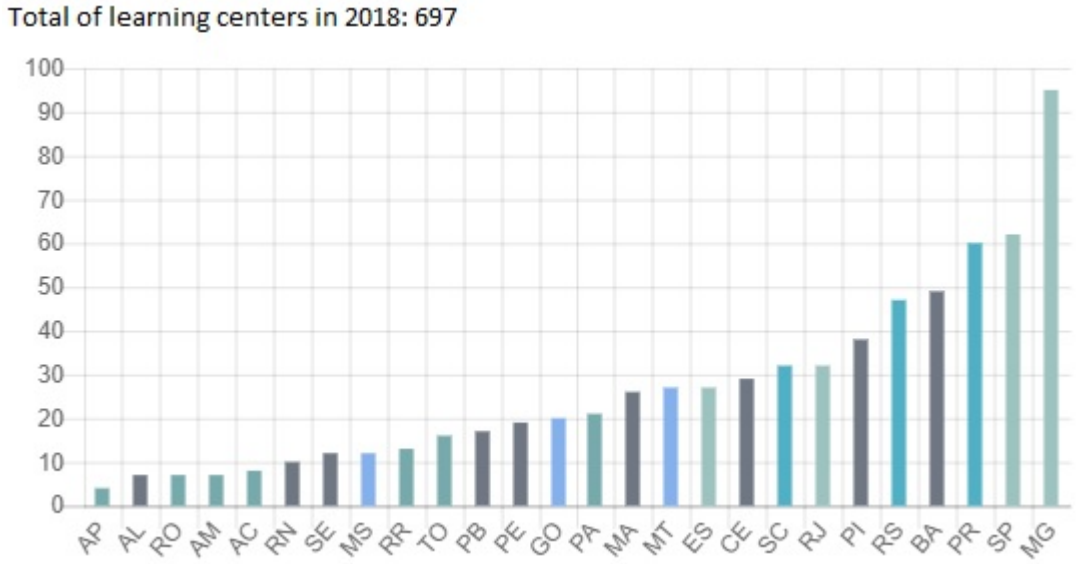

Figure 3. UAB general data: Number of learning centers per state. Retrieved from "Grupo de Pesquisa UAB," 2019 (http://uab.educacaoaberta.org/). CC BY.

The Brazilian Coordination for the Improvement of Higher Education Personnel Agency (2017) carried out national research on the UAB system to study students' opinions of the academic environment. Two questionnaires (2016 and 2017) were sent to 377,543 students who had valid Open University System of Brazil e-mail addresses. In order to determine the quality of courses and students' expectations, the questions focused on teaching conditions, infrastructure, didactic materials, and pedagogical procedures provided by the public institutions of higher education, members of the UAB system.

The research results were based on the responses from 46,459 completed questionnaires, representing 12% of the initial sample of students. It is important to note that it was not mandatory that students reply to the questionnaire. A group of 17,832 (38%) students were from the Initial and Continuous Teacher Development Program; 16,258 (91%) of these worked in public schools. Next, the profiles linked to the National Public Administration Program (PNAP) were identified, with a sample of 9,161 students, representing (20%) of the total number of respondents. Considering the two profiles, the percentage of students in the Teacher Training and Public Administration programs represented 58% of the total. In 3,593 (65%) of the counties, at least one student had already taken or was taking a course by UAB, an essential fact for DED/CAPES regarding the objective of bringing higher education into the interior of the country.

According to Brazilian Coordination for the Improvement of Higher Education Personnel Agency (2017), results from the 2016 and 2017 questionnaires showed a positive framework of student

development within UAB, in academic, tutorial, and personal aspects. As well, responses indicated that the interaction among students, tutors, coordinators, teachers, and educational resources were successful in meeting learning needs.

Aretio (2016) discussed the student assessment model followed by UNED, composed of two modalities, namely remote (and continuous) and face-to-face. It is important to note that Brazilian DE legislation requires that face-to-face assessment be given more weight on final grades than online assessment. This serves to privilege summative rather than formative assessment.

How UAB Addresses Open Education Challenges

Several variables present challenges to the organization and management of a distance education system, including (a) learner support and technological infrastructure, (b) instructional design, and (c) professional development and pay for teachers and tutors. These topics are addressed in detail in the following discussion of the challenges faced by UAB.

Face-to-Face Learning Centers

Tait (2003) stressed the importance of learning centers for the OUUK. Aretio (2016) also indicated that since UNED's early days, learning centers were considered solid components of the DE system there, in which students paid their tuition, met their tutors and peers, used a library and other technical infrastructure resources, and took exams.

At UAB, a face-to-face learning center provides the necessary pedagogical, technological, and administrative support for the teaching and learning activities associated with distance education courses and programs. This structure becomes the institution of higher education's operational and academic arm in the county where it is situated. According to legislation, the preferred location for a learning center is a medium-sized county, with between 20,000 and 50,000 inhabitants, and without a public academic institution of higher education.

There are two types of learning centers. The first has a state or municipal government as the maintaining entity, responsible for the physical, technological, and human resources (except instructors and tutors) infrastructure; the second type is maintained by a higher education institution, part of the UAB system, and is usually located on one of the institution's campuses.

To establish and maintain a UAB learning center, the interested institution must provide spaces with furniture according to its purposes, as well as acceptable conditions of environmental comfort, lighting, acoustics, and ventilation. It must also guarantee the full development of the planned activities, shared by all the working higher education institutions. However, studies such the one conducted by Martins, Nascimento, and Sousa (2018) at learning centers in the state of Ceará indicate that the institutional evaluation at the centers is minimal and out of alignment with the legislation.

The necessary infrastructure of the learning centers has three dimensions. The first are general spaces with rooms and environments for administrative and pedagogical work, compliant with legal requirements for accessibility as stipulated in Laws 10,908 (2000) and 11,982 (2009). The second are support spaces consisting of computer labs with adequate electrical installations (stabilized network), physical and/or online digital bibliographic materials, and an area for study. Finally, there must be

multi-purpose rooms for classes and face-to-face assessment, tutoring, and video/Web conference, as well as learning laboratories for courses requiring hands-on activities such as visual arts, biology, physical education, physics, and pedagogy, as necessary to meet their curricular guidelines.

Professional regulatory bodies in the health area, such as nursing, have recently launched a campaign against distance education in undergraduate courses. (In Brazil, nursing and even medicine are undergraduate courses.) There have been criticisms about the precarious conditions of infrastructure and teaching in some face-to-face learning centers—especially laboratories, libraries, and support structures for students—which do not offer conditions for even the practice of a supervised internship. The Brazilian Association of Distance Education (2017) argued that this type of criticism should be made against the institutions that offer poor quality courses (either face-to-face, blended, or online) and their supervising organizations, not against an educational modality.

On the other hand, there has been criticism from higher education institutions—not only those working within the UAB system—on the excessive time the Brazilian Ministry of Education, responsible for supervision in these cases, takes to authorize a learning center's operating permit, sometimes more than three years! This procedure significantly slows down the growth of DE in Brazil, since Brazilian legislation requires that final exams are held face-to-face in these learning centers.

Decree 9,057 (Presidency of the Brazilian Republic, 2017), however, introduced new guidelines. It became possible to set up face-to-face learning centers outside of the country. Before this, higher education DE institutions could not operate learning centers in foreign countries, so Brazilian students living abroad and studying at a distance were forced to return to Brazil (e.g., from Japan) periodically to take final exams. On the contrary, Aretio (2016) noted that UNED had an international presence since its beginning; in May 1973, learning centers were created in Paris, Berne, Brussels, and Bonn. Eventually, centers were even created in America.

As well, institutions have been given autonomy to create learning centers (and inform the government), no longer depending on the visit of MEC's representatives to authorize their operation. Depending on the institution's evaluation results, they can now create 50 centers per year (evaluation grade 3 or still pending), 150 centers (evaluation grade 4), and 250 (evaluation grade 5). The Ministry's evaluation now focuses on the main campus, automatically including the evaluation of the learning centers. Decree 9,057 (Presidency of the Brazilian Republic, 2017) also expanded the possibilities for partnerships in operating learning centers, since face-to-face activities may now take place in professional environments other than the main institution's campus and the learning centers.

Decree 9,057 (Presidency of the Brazilian Republic, 2017) also cited the option to offer online higher education courses without face-to-face activities and final exams. Institutions had complained about such face-to-face activities; while the pedagogical design of some courses might not specify them, they were, however, required by law. Tait (2003) claimed that a fundamental review of learner support at the Open University UK was necessary. The university established itself offering student support through tutoring and counseling in local study centers, as at that time there was a need to be near the students. However, the development of ICT made it possible for course teams to relate to tutors electronically, and for teachers and tutors to virtually connect to students, radically changing the division of labor. Tait (2003) pointed out that the home could serve as a campus, with resources such as digital libraries and the PC as a workstation. In this new scenario, why would the concept of a regional learning center still be needed? According to Tait (2003), re-thinking the purposes of the regional

learning centers to support student engagement represented a core task for the next 5 to 10 years, a time period that is the present day for UAB. Likewise, Aretio (2006) pointed out the role of virtual tutoring at UNED.

This more flexible legal environment naturally generated adverse reactions, especially from professional councils in the health fields, as mentioned previously. A new bill has been proposed, intended to cancel the effects of Decree 9,057. Although the scope of these new rules directly impacts the private market for distance education, they also affect UAB's functioning.

It is important to emphasize that the flexibility introduced by the new legislation does not rule out or disqualify the rich and complex system of evaluation that constitutes higher education in Brazil, but, on the contrary, takes its results into account. The Brazilian National System of Evaluation of Higher Education evaluates teaching, research, and extension, as well as social responsibility, student performance, management of the institution, faculty and facilities. It includes the following evaluation processes: (a) internal evaluation of Higher Education Institutions (HEIs); (b) on-site external evaluation of HEIs carried out by the Ministry of Education; (c) evaluation of undergraduate courses; and (d) evaluation of the academic performance of undergraduate students through Enade (a national high-stake test).

Instructional Design

The Brazilian Quality Benchmarks for Distance Education (Brazilian Ministry of Education, 2007) cover several elements, including (a) the epistemological concept of education and curriculum in the teaching and learning process, (b) communication systems, (c) teaching material, (d) assessment, (e) the presence of multidisciplinary teams, (f) infrastructure, (g) academic-administrative management, and (h) financial sustainability. These benchmarks suggest that the design and development of courseware and teaching material should follow the epistemological, methodological, and political principles evident in the courses' pedagogical project. Along with the course proposal, teaching material should be an instrument to facilitate the construction of knowledge, the mediation of learning, and the interaction between students and instructors, following a systematic process of validation and evaluation to enrich and improve the content offered.

> The pedagogical project of the course should specify the configuration of the teaching material that will be used. It should determine the multidisciplinary team responsible for this task: the instructors responsible for the content of each discipline, as well as the other professionals in the educational and technical areas (e.g., Web designers, graphic designers, proofreaders, video team, etc.). It should also specify the portion of this material that will be produced and pre-tested by the multidisciplinary institutional team before the beginning of the course. (Brazilian Ministry of Education, 2007)

In distance education, there are diverse types of interaction, not always including direct and frequent contact with the instructor. Thus, courseware and teaching materials, in their different formats, mediate student-content interaction as well as the student's learning process, thereby supporting the transformation of information into knowledge. In this sense, the challenge of designing and developing DE courseware and teaching material is to provide conditions for learning to occur. Brazilian legislation also suggests that:

> Higher education institutions, as well as organs and entities of the Public Administration, which finance or foster distance education, shall ensure the creation, availability, use, and management of open technologies and educational resources, by means of open licenses, to facilitate the use, revision, translation, adaptation, remixing, distribution and free sharing by the citizen, with the corresponding copyright being protected. (Brazilian National Council of Education, 2016)

Although this is a legal statement, in practice, the production of educational material for DE at UAB does not follow these guidelines. There is still a lack of production of OER and it is a challenge to coordinate the creation of educational content in a vast and decentralized system. In addition, each university or consortium uses government money to produce teaching materials for the same disciplines and courses. Although one should acknowledge the existence of diverse cultures in the different regions of a huge country such as Brazil, what effectively occurs is that each part of the system tries to reinvent the wheel and consequently, resources are not adequately used. The current approach is for content to be produced as OER but only for new courses or disciplines, and for materials already produced within the UAB to be converted to OER. In 2016, the EduCapes Portal (www.educapes.capes.gov.br) was created to compile those UAB materials produced with public resources.

Online Teaching and Tutoring

The quality benchmarks for DE in higher education (Brazilian Ministry of Education, 2007a) detailed the primary competencies of the professionals working in DE, from technical-administrative to teaching positions. Students should be the center of the educational process, and interaction should be supported by an adequate tutoring system as well as a computing environment especially implemented to meet the students' needs. These quality benchmarks suggest that teaching staff be linked to the institution, with training and experience in distance education. However, in the UAB system, the content instructors, tutors and other professionals act subsidized by ministerial training grants, not wages paid by the institutions, as discussed in this section.

The UAB system includes the participation of the following professionals, both at the institutions and the learning centers: (a) course instructors, (b) DE tutors, (c) face-to-face tutors, (d) administrative and technical support, and (e) management teams. However, these professionals work according to the pedagogical model and the needs of each institution. The most recent Law, 183/2016, establishes the classification of Content I and Trainer I Instructors for those who have three years of teaching experience, and Content II and Trainer II Instructors, who must have a specified minimum amount of training at a higher level as well as one-year teaching experience.

The content instructor should be involved in preparing teaching materials, as well as project development and research related to the courses and programs implemented within the system. A trainer instructor works at typical teaching activities, and participates in research projects and development of teaching methodologies in initial and continuing training of primary education teachers within the scope of the UAB system. In addition, the trainer instructors' activities include (a) planning, production, and delivery of content; (b) creating multimedia resources; (c) monitoring and training tutors' actions; (d) monitoring student performance; (e) holding weekly pedagogic meetings; and (f) course evaluation by means of the student, tutor, and assessment system records.

The importance of the distance tutor is evident in the MEC/INEP evaluation instruments used for the accreditation of DE courses and for ensuring the quality of the teaching offered, mainly by identifying, in higher education institutions, the ratio of the number of students to the number of tutors. Also, the

role of tutors was legitimized in Resolutions by the National Educational Development Fund 26/2009 and 8/2010, that established the guidelines for the payment of scholarships and research grants for professional staff (Presidency of the Brazilian Republic, 2006).

For those who prepare and implement the courses in the initial and continuing higher education programs under UAB, and linked to CAPES, scholarships would be paid by FNDE with the following criteria:

> Tutor: professional selected by the public institution of higher education linked to the UAB System for the exercise of typical tutoring activities, requiring higher education and minimum experience of 1 (one) year in the teaching of primary or higher education, or have a graduate degree, or be linked to a graduate program. (Educational Development National Fund, 2010)

Administrative Rule 183, dated October 21, 2016—which regulated the granting and payment of scholarships to participants in the design and delivery of courses and programs of initial, continuing, and higher education training under UAB—abolished the requirements for graduate training enrollment in a graduate program. In the current configuration, the tutor profile consists of higher education and minimum one-year experience teaching primary or higher education:

> III. Tutor: R$ 765.00 (seven hundred and sixty-five reais—around US$ 200.00) granted to perform typical tutoring activities developed under the UAB System, requiring higher education and minimum experience of 1 (one) year in the teaching profession of the K12 or higher education. (Brazilian National Council of Education, 2016)

These new regulations thus maintain the higher education requirement and stress the importance of teaching experience for those tutoring courses in the UAB system. Suppressing the demand for graduate training or enrollment in a graduate program emphasizes the value given to teaching experience, to the detriment of graduate training; hence, teaching experience becomes essential for one to act as a tutor. However, the new regulations reduce the level of credentials expected of those who tutor specialization courses and courses at the master's level. Thus, these regulations do not broadly address the need to attend undergraduate courses, specialization courses, and enroll in master's degrees at the same time.

Regarding actual tutoring activities, although there is no distinction between face-to-face and distance work, distance learning activities involve (a) pedagogic mediation of student activities via LMS, (b) providing feedback and follow-up on student activities, (c) supporting teaching activities, (d) collaborating and participating in the assessment process, and (e) participating in continuing training courses. On the other hand, a face-to-face tutor guides, accompanies, promotes, and stimulates the student face-to-face, as well as dynamizes the face-to-face classes that are previously prepared by the instructors.

The legislation indicates that the instructor is the professional who will teach classes or courses at all levels of education, be it in children's, primary, higher, vocational, or technical education. Hiring advertisements for UAB's tutors confirm this teaching status, mainly in how the position is described, namely teaching in academic courses of higher level at a distance. However, after 2010, hiring advertisements for UAB distance tutors described the work as tutoring in disciplines of undergraduate courses, distance modality. By analyzing the job descriptions, it is clear that depending on the

institution, tutors may combine the functions of an academic advisor, virtual tutor, teacher-tutor, teacher-monitor, or teacher-supervisor of students' final work.

In any case, regardless of how distance learning tutors in the UAB system are labelled, they teach—with the seal of state and municipal partnerships, institutions, and the Ministry of Education. When reporting experiences, guiding, discussing in a forum, assessing and grading activities, the tutor teaches at a higher education level. Lack of recognition of distance tutors' contribution adds to the precariousness of the DE teaching work throughout the country.

Conclusion

This paper has outlined the general characteristics of distance education in Brazil, focusing specifically on the structure of UAB—The Open University of Brazil, which is neither open (because a student needs a K to 12 diploma and must pass a written test of knowledge) nor a university (but rather a system of higher education institutions). Because the system is based on face-to-face universities, it naturally inherits their flaws and problems.

Since a more flexible legal environment was established by Decree 9,057 (Presidency of the Brazilian Republic, 2017), the distance education market now faces intense growth in the country, especially in the creation of face-to-face learning centers. The requirement for face-to-face activities at learning centers is now under review, as these might not be necessary for some pedagogical projects. The Decree seems an essential step to overcome the highly centralized control over distance education on the part of the Brazilian Ministry of Education (Litto, 2002). As well, institutional evaluation at the centers is another important step in the search for best teaching and learning quality practices.

There is also a structural problem regarding the production of courseware and teaching materials, with many institutions using government money to produce content for the same courses. Besides that, although this is a legal provision, the UAB system was not able to organize an OER structure to include these materials produced by the institutions, which today still consist mainly of texts and downloadable PDF, without the use of Creative Commons Licenses. UAB's material is thus not fully open nor available free for others to use, and a non-copyright policy is not clear for what is produced with government money.

Finally, UAB has not recognized the experience of tutoring as an act of teaching in higher education. Low pay and temporary scholarships prevent tutors from being incorporated into the institutions' pedagogical teams, and contribute to the precariousness of the teaching exercise.

These and other challenges show that the recent experience of an open university in Brazil is still in its initial phase, requiring natural adjustments and restructuring. Only 11% of the working population in Brazil holds a university diploma, and only 20% of those ages 18 to 24 are enrolled in higher education, while other South American countries such as Argentina and Chile reach 30%, and the US and European nations exceed 60% (Litto, 2018). These numbers stress the need for the development of distance education and UAB.

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A Tour of Open Universities Through Literature: A Bibliometric Analysis

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Abstract

Since open universities can adapt to students' work schedules, personal preferences, age, and so on, they have facilitated access to education for a large group of people. The open university phenomenon, which arose in the 1960s, fostered countries' cultural growth; higher education was now longer exclusively for a privileged few. This paper presents a bibliometric study on the existing scientific output on open universities throughout the last 40 years. A bespoke methodology of bibliometric studies has been used, by setting key descriptors to be consulted in the most prestigious scientific database Web of Science. The sample was composed of 809 papers in total, indexed in prestigious journals and published during the period 1969 to 2018. The output, scattering, and impact bibliometric indicators were analysed in those papers. Among the results obtained, it was found that scientific output on open universities is in a phase of exponential growth, in which 2015 was the most productive year. Furthermore, the UK, where the phenomenon of open universities started, is the country with the most scientific output. Finally, the bibliometric study of the output indexed in the Web of Science shows a panoramic vision of the past, present, and future of open universities, emphasising the idea that this phenomenon is continuing to grow.

Keywords: open universities, higher education, bibliometric analysis, scientific output

Introduction

Since they were established, open universities (OUs) have provided their own type of education, with the aim of bringing higher studies closer to everyone. The main change they promoted was to offer distance studies that could be adapted to the learning process of each student (Open University of Catalonia, 1998). This is one of the premises of open universities—the possibility of providing education within everybody's grasp, regardless of their location, age, or socioeconomic background (Lim, Fadzil, & Mansor, 2011). The OUs are defined as "institutions which provide open admission to adult students and, through flexible policies and a variety of delivery mechanisms, notably distance education, provide access to and success in university education to those previously denied such opportunity" (Paul, 1993, pp. 115–116).

This higher education revolution began in the United Kingdom, where The Open University UK was founded in 1969. In its more than 40 years of existence, it has developed distance studies extensively by using its own learning approach based on learning design (LD), defined as a methodology focused on teachers' ability to improve the design of learning activities and the effective use of technological resources (Rienties et al., 2016). The key point is to provide the student with materials that aid their learning (Rienties, Nguyen, Holmes, & Reedy, 2017).

The phenomenon of OUs is global, as many of its implications have worldwide appeal, including: (a) flexible schedules in order to be able to combine studies with work and family, (b) eradication of geographical barriers, (c) lower costs for students, and (d) the possibility of access to education for vulnerable groups (Inouye, Souza, Lost, & Silva, 2018; Lima, Maia, Veras, Delgado, & Moreira, 2003; Tait, 2013). These factors have had an impact on the spread of OUs across different countries, 11 of which are the largest distance learning institutions (Tait, 2013): (a) Allama Iqbal Open University (AIOU; Pakistan); (b) Athabasca University (AU; Canada); (c) Indira Gandhi National Open University (IGNOU; India); (d) National Open University of Nigeria (NOUN); (e) The Open University UK (OU); (f) The Open University of China (OUC); (g) Open University of Malaysia (OUM); (h) The Open University of Tanzania (OUT); (i) Wawasan Open University (WOU; Malaysia); (j) National Distance Education University (UNED; Spain); and (k) University of South Africa (UNISA). These universities represent a large number of countries from all corners of the planet.

It is important to differentiate between OUs and distance education. An OU is an institution dedicated to adult education, with adapted curricula, free knowledge, and innovative methodology, whereas online or distance training is a training modality that does not require attendance and is adapted to the students' specific characteristics and needs (Inouye et al., 2018). Furthermore, distance education does not require face-to-face interaction; OUs may use distance education as part of the teaching methodology as well as it can be used as a training resource at the OU (Paul, 1993).

The success of OUs goes back to the first comparative research with regular universities, whose results revealed that the need for both self- and externally regulated learning was similar in both types of higher education (Vermunt, 1998). As stated in subsequent research (Cabrera & Fernández-Ferrer, 2017), teachers in OUs show a certain sensitivity to applying functions based on feedback from students, thus achieving greater engagement. In addition, since their beginnings, these universities have been consolidating as one of the modalities *par excellence* among adults over 50 years of age (Klimczak & Kossakowska, 2018).

OUs have been transformed by the emergence of information and communication technologies (ICT). Adopting e-learning has equipped OUs with more resources for learning and has enabled them to increase their target audience (Olatunji, Afolake, & Kehinde, 2017; Salmon, 2000). Therefore, their ample presence on the World Wide Web as well as their open educational resources help students learn about how OUs work and what training programmes they offer (Daga, d'Aquin, Adamou, & Brown, 2016).

Over recent decades, virtual campuses have become the main space for accessing learning content, and also as a meeting point for students and teachers (Caballe & Xhafa, 2013). This system implemented by OUs has enabled their exponential growth, by facilitating ubiquitous access to information.

Among the current new challenges for OUs are the constant updating and implementation of technologies that improve the learning process for students. For example, where emerging mobile technologies begin to be introduced, mobile learning approaches soon follow (Rangel & Pereira, 2016).

Given that OUs have existed for half a century, and taking into account the huge changes they've brought to the access to and democratization of university learning, analysing the literature published over those years is of scientific interest. In order to give a sense of continuity to the subject, this research followed the line of other bibliometric studies in the field of open and distance learning.

The first (Avello-Martínez & Anderson, 2015) focused on classifying the papers published by *The International Review of Research in Open and Distributed Learning* (*IRRODL*) since its origin in the year 2000, and on the general and particular impact of the highly cited papers. The second (Zawacki-Richter & Naidu, 2016) focused on trends in distance education research in the journal *Distance Education* during the period of 1980 to 2014. It highlighted general topics that have prevailed in a series of five-year periods.

However, unlike these specialised works in specific journals, this paper reviewed the historical journey of OUs through bibliographic analysis of published papers in journals indexed in the Web of Science database. The purpose of this study is to increase readers' knowledge of the OU phenomenon and its current state of development through the analysis of different bibliometric indicators. The justification for and significance of this analysis are based on the four research questions that guide the work:

- What is the status of production of articles on OUs over time?
- Is there a productive relationship between the number of authors and papers?
- Are most papers concentrated in a small number of journals?
- What are the main journals, organisations, authors, and countries with the highest scientific output on OUs?

Methods

Bibliometric studies consist of the analysis of metadata from scientific literature to determine the current state of a specific topic (Glanzel & Schoepflin, 1999). Considering the social impact and the

educational revolution caused by the OUs for more than 40 years, this paper was designed to analyse the scientific output on open universities from their origins in 1969 to 2018.

Following the consideration of previous bibliometric studies (Cristino, Neto, & Costa, 2018; Glanzel, 2002; Gómez-García, Ramiro, Ariza, & Reina, 2012; Gutiérrez, Martín, Casasempere, & Fernández, 2015; Juliani & de Oliveira, 2016), bibliometric indicators related to the output, scattering, and impact of the literature released on OUs were analysed. More specifically, output indicators show the diachronic productivity and the authors' productivity based on the verification of Price's (Price, 1986) and Lotka's (Rousseau, & Rousseau, 2000) bibliometric laws. Scattering indicators show journal distributions regarding the number of documents; to this end, Bradford's law indicates the uniform distribution of papers within different areas (Urbizagastegui, 2016). Finally, impact indicators specify the influence that some journals, institutions, authors, and countries have had concerning the scientific output on this topic. Impact factors were measured through the number of documents and quotes (Gutiérrez et al., 2015).

The study focused on the Web of Science database (WOS), since it is the most prestigious one among social sciences given its own impact factor, namely the Journal Citation Reports (JCR) (Hernández, Reverter, Jové, & Mayolas, 2013). The unit of analysis comprised papers from journals indexed in WOS up to the third semester of 2018 (N = 809). With the aim of covering a greater breadth of documents on OUs, the search term "Open Universities" OR "Open University" was set up. This term was entered into the search engine, selecting the category of topic in order not to limit initial results. Subsequently, a number of inclusion and exclusion criteria for refining scientific literature were applied (Table 1).

Table 1

Inclusion and Exclusion Criteria Used in the Bibliometric Study

Inclusion criteria	Exclusion criteria
The main topic involves experiences, research or theoretical studies on open universities	Open universities are not the main theme of the paper
Journal article	Proceedings paper, book review, book chapter, editorial material, book

Limitations

Two methodological limitations of the bibliometric study are highlighted. The first is related to data collection in 2018, given that at the time of search the year had not ended; thus, there is a possibility that scientific production may vary by the end of the year. The second limitation is typical of bibliometric studies in databases and is linked to the search engine. In this sense, those articles that do not include the descriptor "Open Universities" or "Open University" in the title, summary, or keywords may be excluded from the final results.

Results

The results obtained in each indicator analysed reveal the current situation of scientific literature on OUs. The following section presents data based on each of the different bibliometric indicators. Some data have been analysed using the statistical programme SPSS (version 24).

Output Indicators

Diachronic productivity (Figure 1) shows the beginning of scientific output in 1970, a year after the first OU started. 1987 is the year with the least output, with 0 documents, while in 2015 literature peaks at 82 papers (10.13%). Furthermore, it is observed that during the 1970s, there were more publications on OUs than in the 1980s and 1990s, showing a drop in scientific output during the years following the beginning of this type of universities. The upturn in literature takes place in 2000, and it has kept growing since then.

In order to verify Price's law, the scientific output has been classified in periods of five years (Gutiérrez et al., 2015); the main premise of this law is that literature tends to duplicate after 10 years. In this case, this assumption was not met for the first decades, given that there was more literature in the 1970s than in the 1980s and 1990s. On the contrary, from 1990 (31 documents; 3.83%) to 2000 (72 documents; 8.89%), and from 2000 to 2010 (167 documents; 20.64%) the duplication explained by Price (1986) was indeed produced. Likewise, Price divides scientific output into three different phases: (a) precursor phase, (b) exponential growth phase, and (c) linear growth phase. Each one defines a period in the literature by making reference to its origins, development, and consolidation. The output on OUs classified in years shows a precursor phase during 1970 to 1989. It is currently in an exponential growth phase that began in 1990, during which output remains at full peak level.

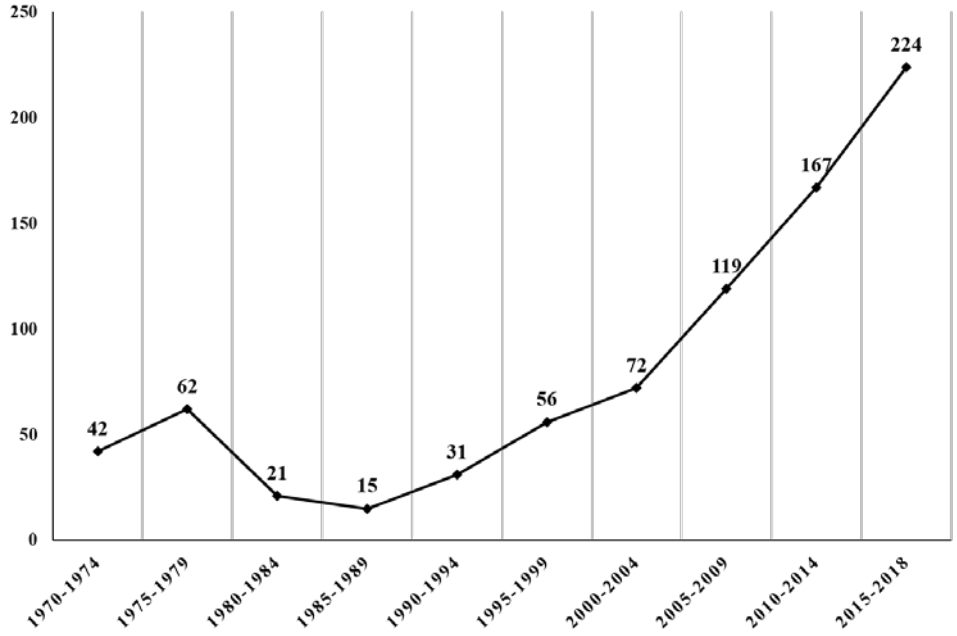

Figure 1. Diachronic output on OUs organized in periods of five years.

Author productivity shows the relationship between the number of authors and papers (Table 2). Lotka's law indicates that most papers come from a few authors who are considered to be very

productive (Rousseau & Rousseau, 2000). This is reflected in literature on OUs, in which a large proportion of the papers are written by just one author. Thus, we have an output of 44 papers by one author (5.43%), while 560 authors only submitted one paper (.12%). This happens successively, wherein a large number of documents are produced by a few authors. In this regard, following the guidelines suggested by González, Moya, and Mateos (1997) the scientific literature on OUs is underpinned by 560 authors who are considered lesser producers (< = 1 paper; 60.75%), 355 authors who are medium producers (> 1 < = 9 papers; 38.50%), and 7 authors classified as super-producers (> = 10 papers; .75%).

Table 2

Relationship Between Authors and Papers in Literature on OUs

Authors	Number of papers
560	1
183	2
144	3
16	4
8	5
2	6
3	7
1	8
1	9
1	11
1	12
1	14
1	21
1	29
1	42
1	44

The data support Lotka's law. Their graphic expression shows the negative correlation between the number of authors and papers (r = -.37; y = 14,647$e^{-.091x}$; see Figure 2). Therefore, fewer authors are concentrated among a greater number of articles. Although the model has a low calibration (R^2 = .31), the relationship between the variables properly reflects the bibliometric indicator of the authors' productivity.

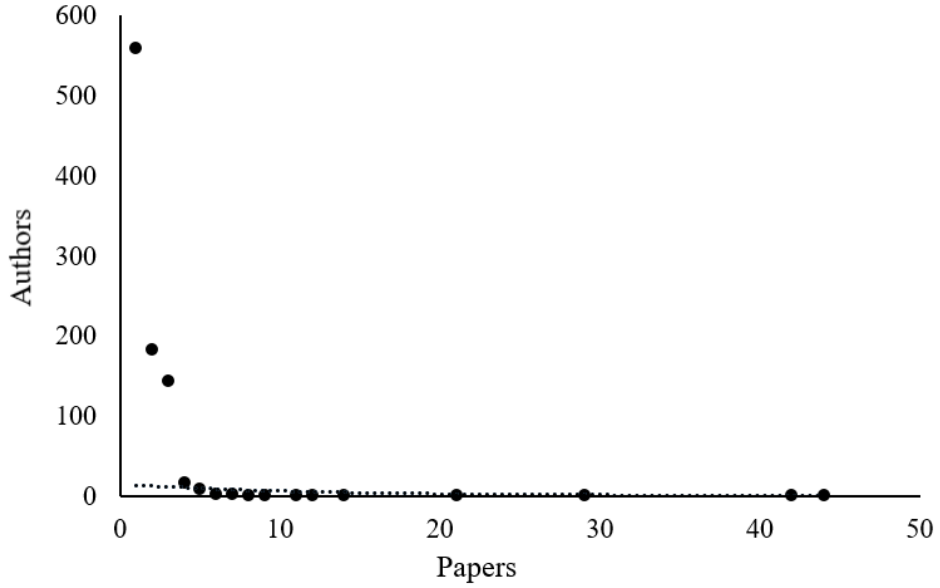

Figure 2. Correlation between authors (Y axis) and papers (X axis).

Scattering Indicators

Scattering in scientific output on OUs is determined by the distribution of journals according to the number of documents. Bradford's bibliometric law was applied, and it showed an equal distribution of papers by zones, highlighting that the centre had a number of documents equivalent to the remaining zones, despite having fewer journals (Urbizagastegui, 2016). Something similar occurs with Lotka's law—most of the papers were concentrated in a small group of journals.

By implementing Bradford's law, four zones were obtained, with approximately 200 papers each (see Figure 2). The total amounts to 407 journals and 809 papers. In particular, the centre comprises 193 papers (23.85%) and 10 journals (2.45%); zone 1 has 201 papers (24.85%) and 48 journals (11.80%); zone 2 has 205 papers (25.35%) and 139 journals (34.15%); and zone 3 has 210 papers (25.95%) and 210 journals (51.60%). Therefore, the scattering of literature is verified, since the centre involving 10 journals contains a similar number of documents to the remaining zones, which have a larger number of journals.

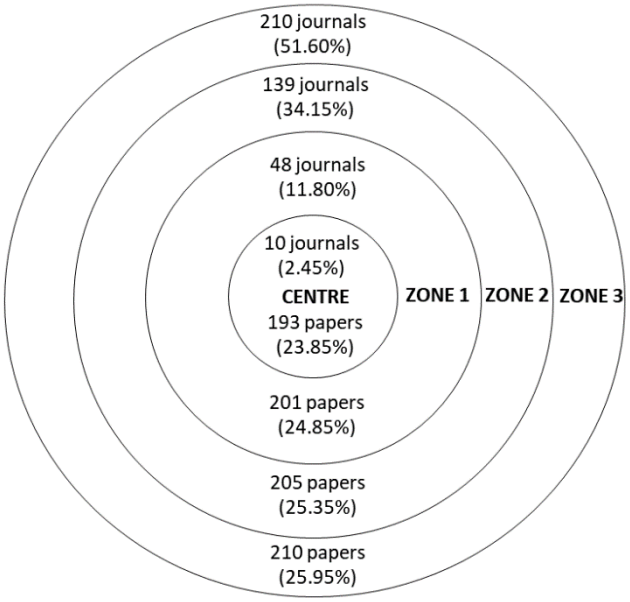

Figure 3. Bradford's scattering zones of scientific journals on OUs.

It is possible to find the significance in the correlation between the number of journals and papers in an analysis of linear regression, this relationship being negative (r = -.34; $y = 12{,}329e^{-0{,}088x}$). See Figure 4. Besides, the model reveals a good calibration (R^2 = .36), explaining 36% the variability of the Y axis in proportion to its average. In other words, the fewer the journals, the trend is a greater number of documents.

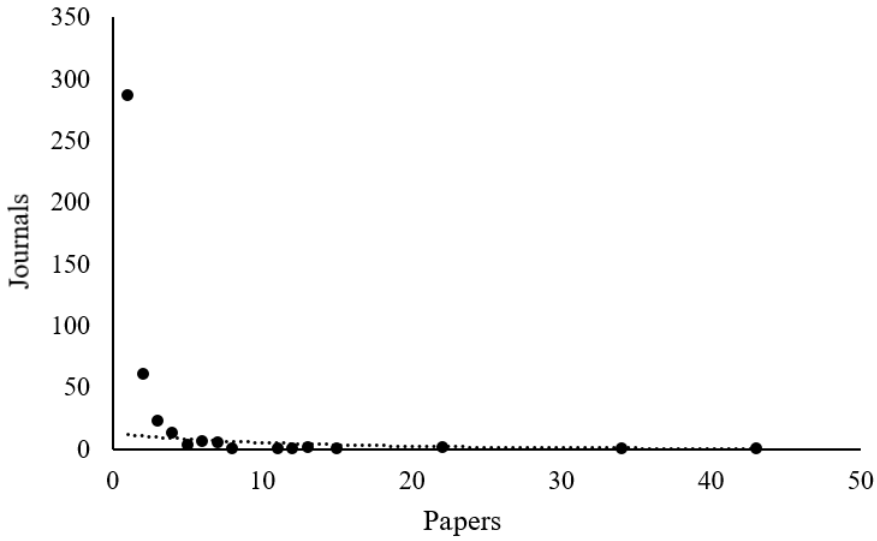

Figure 4. Analysis of linear regression between the number of journals (Y axis) and papers (X axis).

Impact Indicators

Over the years, contributions to the OU literature have come from a variety of journals, institutions, countries, and authors. These points of reference are prominent given the number of documents published as well as the scientific impact thereof. The journals analysed in this study comprise the centre of Bradford's scattering zone (n = 10). Most of these journals are characterised by having major

editors, such as the groups represented by Wiley, Elsevier, Springer, and Taylor & Francis. Only 2 of these 10 journals are managed by small editors, namely Athabasca University Press and International Council for Open and Distance Education (ICDE). See Table 3.

Table 3

Journals With the Most Output on OUs

Journal	Papers	%	Citations	II	Editors
British Journal of Educational Technology	43	5.31	406	9.44	Wiley
International Review of Research in Open and Distributed Learning	34	4.20	231	6.79	Athabasca University Press
Computers & Education	22	2.71	480	21.81	Elsevier
Higher Education	22	2.71	274	12.45	Springer
Studies in Higher Education	15	1.85	301	20.06	Taylor & Francis
Systemic Practice and Action Research	13	1.60	53	4.07	Springer
Open Learning	13	1.60	22	1.69	Taylor & Francis
Distance Education	12	1.48	69	5.75	Taylor & Francis
Open Praxis	11	1.35	11	1	ICDE
Religion	8	.98	4	.5	Taylor & Francis

Note. II = impact index. Calculation of the impact index = citations/papers.

Most of the referring institutions on this topic are themselves OUs. Those considered super-producers (> = 10 papers) were analysed. The Open University UK stands out by far over the other universities, exceeding the second most productive one by six times (Table 4).

Table 4

Organizations With the Most Output on OUs

Organization	Papers	%	Citations	II
The Open University UK	287	35.47	2,713	9.45
Sukhothai Thammathirat Open University	45	5.56	393	8.73
Australian National University	44	5.43	421	9.56
University of London	22	2.71	89	4.04
Open University of the Netherlands	19	2.34	176	9.26
Monash University	16	1.97	139	8.68
Hellenic Open University	15	1.85	204	13.16
Open University of Catalonia	15	1.85	111	7.4
University of Queensland	11	1.35	216	19.63

Note. II = impact index. Calculation of the impact index = citations/papers.

The most productive countries are the super-producers (n = 13). England is the country with a much higher number of papers compared to the others, with a total of 365 documents, which represents 45.11% of general output—this means almost half of all literature on OUs. England also represents a huge number of citations, namely 3,552and an impact factor of 9.73 points (see Table 5).

Table 5

Countries With the Most Output on OUs

Country	Papers	%	Citations	II
England	365	45.11	3,552	9.73
Australia	64	7.91	583	9.10
Thailand	49	6.05	400	8.16
Brazil	47	5.80	359	7.63
Spain	47	5.80	318	6.76
USA	42	5.19	213	5.07
Netherlands	25	3.09	501	20.04
India	23	2.84	32	1.39
Greece	22	2.71	250	11.36
Scotland	21	2.59	236	11.23
China	17	2.10	147	8.64
Canada	16	1.97	102	6.37
Israel	15	1.85	166	11.06

Note. II = impact index. Calculation of the impact index = citations/papers.

There are 7 authors considered to be super-producers, contributing a total of 173 papers (21.83% of total output). Furthermore, 6 of these belong to the same institution (the Australian National University),

having submitted papers with joint authoring. The other author is affiliated with The Open University UK (see Table 6).

Table 6

Authors With the Most Output on OUs

Author	Papers	%	Citations	II	Organization
Sleigh, A.	44	5.43	421	9.56	Australian National University
Seubsman, S. A.	42	5.19	379	9.02	Australian National University
Yiengprugsawan, V.	29	3.58	198	6.82	Australian National University
Richardson, J. T. E.	21	2.59	281	13.38	The Open University UK
Bain, C.	14	1.73	213	15.21	Australian National University
Banwell, C.	12	1.48	98	8.16	Australian National University
Kelly, M.	11	1.35	83	7.54	Australian National University

Note. II = impact index. Calculation of the impact index = citations/papers.

Discussion

The bibliometric study carried out followed the approach taken by previous works that analysed a certain topic based on bibliometric indicators (Cristino et al., 2018; Glanzel, 2002; Gómez-García et al., 2012; Gutiérrez et al., 2015; Juliani & de Oliveira, 2016). Therefore, this paper was prepared on the basis of these studies, and analysed the metadata of the literature published on open universities, and considered the bibliometric indicators of output, scattering, and productivity.

The changes to higher education brought about by the OUs are fully reflected in the literature, where we can see the large number of documents generated on the topic over recent years. The number of documents has increased through the implementation of ICT at OUs (Caballe & Xhafa, 2013; Olatunji et al., 2017; Salmon, 2000); many of institutions have turned into references in terms of implementing educational technologies and virtual learning, as is the case for The Open University UK (Daga et al., 2016). In this respect, the impetus given throughout those years to apply ICT in education may be a variable that explains the surge in scientific output.

It is remarkable how literature dropped in the 1980s after its beginnings in the 1970s, which suggested there would be an increase in output in the following years. The events that the UK experienced in the 1980s with the Falklands War and the fall of the Berlin Wall could have had a negative impact on the interest in OUs at that time.

On the other hand, there was a concentration of a large amount of output by the same authors and journals, by which they became established as authorities in this field. Some authors, such as Sleigh, A. and Seubsman, S. A., with more than 40 papers each, are highly productive and have one tenth of the total output. Thus, Lotka's law is verified (Rousseau & Rousseau, 2000). Scattering through journals is also clear, confirming that there are currently 10 journals (Bradford's core) that feature a similar number of papers in 210 journals (zone 3; see Figure 3), which confirms the premise set out by Bradford's bibliometric law (Urbizagastegui, 2016). Thus, over these years, given the high number of documents published, a cluster of journals (e.g., *BJET* and *IRRODL*) have specialised in OUs.

Data revealed that The Open University UK is the institution with the greatest body of papers. It was founded in 1969 and has had a long history in distance and online education, offering learning opportunities to anyone who wants to study (Tait, 2013). Its consolidation as a global reference for research on OUs is demonstrated by the massive number of published papers, which distances it from the institution with the second highest output. Consequently, England is the key reference country not only because it was the place where the OU phenomenon originated, but also because of its broad scientific output. Moreover, there is a correlation between institutions and countries—the countries with OUs are those which produce more scientific publications on this topic. Some of these institutions have become the subjects of much of their own research.

However, these data showed that the impact of the key journals, institutions, countries, and authors does not depend solely on the number of papers. Rather, the number of citations also plays a major role in measuring impact. Therefore, some of those with fewer documents have had a greater scientific influence on the field.

To sum up, the number of documents and the setting of benchmarks on the topic highlighted the consolidation of the scope change brought by OUs; that is, student-centred learning (Rienties et al., 2016; 2017) with social justice principles (Tait, 2013) to bring education closer to the entire population, regardless of their socioeconomic status (Inouye et al., 2018; Lim et al., 2011; Lima et al., 2003).

Conclusion

With all these data it is possible to make some inferences concerning the trajectory the scientific output on OUs is taking. Among them, it is important to note the social implications of these institutions related to making higher education more universal, and its openness to adults, such as students over 50 years of age (Klimczak & Kossakowska, 2018).

We are looking at a booming topic which still has a long way to go. In line with its trend, it is expected that output on OUs will continue to increase for years to come. Applications of emerging methodologies, such as mobile learning, the Internet of Things, and artificial intelligence will be paramount for the continuity and development of OUs.

To conclude, this paper has answered the initial objective proposed about analysing scientific output on open universities from their origins in 1969 until 2018. In addition, the results show the answers to the research questions that guided the work: (a) state of production of OUs over time; (b) the productive relationship between the number of authors and papers is confirmed; (c) the concentration of most papers in a small number of journals; and (d) collecting the main journals, institutions, authors, and countries with the highest scientific output on OUs.

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Factors Related to Student Persistence in Open Universities: Changes Over the Years

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Abstract

Student persistence has long been a major challenge for open universities. Despite the evolution of open education, an overall high student attrition rate remains. This paper examines the changes and trends in factors related to student persistence in open universities. It reviews the empirical studies from the 1970s to the 2010s which reported factors influencing student persistence. The relevant studies were searched from databases, including Scopus, Web of Science, and Google Scholar. Among the 108 studies collected, a total of 284 factors influencing student persistence were identified. The factors were categorised into student factors, institutional factors, and environmental factors. Their changes and trends over the years were examined. The results show that student factors were the most frequently studied over the years examined, with the major categories being students' psychological attributes and outcomes. Institutional factors have been increasingly studied in recent decades, with the design and delivery of programmes and courses being the strongest category. Finally, environmental factors have been decreasingly examined, with factors related to students' family and work being the two main categories. Based on the results, the implications for developing intervention and retention strategies for student persistence in open universities are discussed.

Keywords: student persistence, retention, attrition, open universities, open and distance education

Introduction

Student persistence has long been a major challenge for open universities. Throughout their development—from the founding of the UK Open University in 1969 to the current situation with about 60 open universities established around the globe—student persistence (and student attrition) has received considerable attention (Tait, 2018a, 2018b). Despite the wealth of literature published on this topic over the past decades, it remains a major problem for open universities today. A recent report by the Commonwealth of Learning, which reviewed the status of 27 open universities in the Commonwealth, found an average output rate of only 15.26% (the proportion of students leaving the universities in a particular year with a qualification), indicating a huge attrition rate in these universities (Commonwealth of Learning, 2017).

The challenge of student persistence has affected the performance of open universities. For example, the UK Open University, despite having the highest output rate (about 55%) among open universities (Commonwealth of Learning, 2017), is still facing the problem of student retention. The high student attrition rate is threatening the financial status of open universities as well as having a negative impact on their reputation and recruitment, particularly when about half of the open universities have already been suffering an enrolment decline or loss of market share (Garrett, 2016).

Although student attrition has been shown to be happening in many higher education institutions, Simpson (2013) found that the graduation rates in open universities were in general only about a quarter of those in conventional face-to-face institutions. The contexts in which these two types of education institutions operate suggest that the factors which contribute to student persistence differ between them. Tait (2018a) pointed out that the characteristics of the open university model make student retention more vulnerable. For example, opening access to study results in learners having lower prior educational achievement, and learners in part-time and distance modes face more difficulties than do full-time students. Therefore, specific factors affect student persistence in the open university model.

This paper presents a comprehensive study of the factors involved in student persistence in open universities and identifies changes in these factors. Within the large amount of work carried out in this area, the evolution of open education—involving technological updates and changes in the course delivery mode—has introduced new factors related to student retention. The results of this study contribute to informing the strategies for student retention and intervention in open universities. In particular, this study focuses on the following research questions: (1) What are the factors which affect student persistence in open universities in various periods of time? (2) What are the changes and trends in these factors over the various periods of time?

Literature Review

Student persistence has been widely studied in the past, and a broad range of related factors have been identified. For example, Au, Li, and Wong (2017) reviewed the literature on this issue, and categorised the related factors into student factors and institutional factors. The former address students' demographic information, such as age, personal expectations about studying in an open university (e.g., the amount time and effort required and work and family commitments), and motivational and psychological factors (e.g., a sense of accomplishment and the goals of study). Institutional factors are

related to the quality and content of programmes and courses, and the institutional support offered to students. Li, Wong, and Wong (2015) and Wong and Wong (2016) addressed the issue from the perspective of student support, identifying the specific support needs of students studying in open universities.

Simpson (2013) identified several inherent deficit factors in open universities that may cause students to terminate their studies. One major factor is the lower student qualifications as a result of open entry, and many mature students possess low self-expectations about fulfilling the challenging course requirements (Gibbs, Regan, & Simpson, 2006). Second, the courses provided by open universities may be taken by students with the aim of meeting the requirement for gaining admission to other institutions, so they can transfer there after gaining course credits from the open universities. There are also cases in which students settle for only an intermediate qualification, such as a diploma or certificate, without pursuing the full degree, which leads to some pre-graduation dropout. Yet another factor is the part-time mode of study, wherein many students must cope with family and job responsibilities along with their studies, and eventually drop out for non-academic reasons.

Despite the substantial amount of work on student persistence, the related factors have yet to be systematically reviewed and summarised. The existing reviews of this topic have covered only part of the relevant literature. For example, Hart's (2012) review of the factors associated with student persistence—which identified a total of 24 factors which facilitate or hinder it—covered only 20 articles published from 2001 to 2011. Similarly, Lee and Choi (2011) summarised a total of 69 factors from 35 studies published between 1999 and 2009. Given the several decades of historical development of open universities, a large amount of literature remains to be covered. In addition, as open education has evolved, with technological advances and changes in the delivery mode, the factors influencing student persistence have also been changing. However, this aspect has yet to be addressed in the existing reviews of the literature.

Research Method

This study reviewed the factors related to student persistence in open universities, examined the changes in the factors between various periods of time, and identified the trends in the factors, if any. It covered the studies conducted from the 1970s to the 2010s, and targeted peer-reviewed journal articles to help ensure the quality of the studies (Krull & Duart, 2017). The related literature was collected from publication databases including Scopus, Web of Science, and Google Scholar. The keywords used for the search included student persistence/retention/attrition/dropout, open/distance learning/education, and open university/universities.

The initial search following the above criteria resulted in 1,860 articles. Each of these was scanned and was selected if it

- involved an empirical study conducted in an open education setting;
- focused on identifying factors affecting student persistence;
- was published in a peer-reviewed journal;

- was written in English; and
- was available in full text.

After further screening, a total of 108 journal papers were collected for review, including one paper published in the 1970s, 16 in the 1980s, 18 in the 1990s, 35 in the 2000s, and 38 in the 2010s (until 2017). As only one relevant paper published in 1979 was found for the 1970s, it was put together with the papers published in the 1980s for analysis.

From these selected studies, the study contexts and the relevant factors for student persistence in open universities were identified for further analysis and evaluation of the quality of the studies. The contextual information on the studies was organised according to their scale, location, and research method. The student persistence factors were included for analysis only if they were found empirically in the studies through checking their results. Among the 108 papers reviewed, a total of 284 factors were reported which were found to have positive or negative effects on student persistence. After excluding the repeated factors, the number of factors was 194.

The factors were categorised into three main groups: (a) student factors, (b) institutional factors, and (c) environmental factors. The grouping approach followed that used by Lee and Choi (2011), except that since a broader range of factors were identified, a more general group—institutional factors—was used in this study (to replace the course and programme factors in their review). Within each main group, the factors were further classified into various subcategories and their frequency was counted. Lee and Choi's categorisation was extended to include the subcategories not covered in their study, resulting in a total of 14 subcategories under the three main groups, namely:

- Student factors—demographic factors; psychological attributes; prior educational experiences; prior knowledge and skills; planning, managing and resource allocation; psychological outcomes; and academic outcomes.
- Institutional factors—the design and delivery of programmes and courses; interaction; institutional support; and other institutional factors.
- Environmental factors—family factors; work factors; and other environmental factors.

The identification and categorisation of factors were performed by two researchers independently for cross-checking. Any disagreements during the process were resolved through discussion and further review of the disputed cases.

Results and Discussion

Overview of the Studies

The 108 papers collected for this study were published in 43 different journals. Table 1 shows the journals with three or more papers, which covered about 60% of the papers in this research. The journals focused mainly on studies related to distance education and technology in education.

Table 1

Distribution of Journals with Three or More Papers in This Study

Journals	Frequency
Distance Education	24
American Journal of Distance Education	12
Internet and Higher Education	9
Online Journal of Distance Learning Administration	7
International Review of Research in Open and Distributed Learning	6
Computers & Education	5
Research in Higher Education	3

Figure 1 presents the sample sizes of the studies. The studies involved various scales, from below 100 to above 1,000 participants, with no dominant sample grouping. The largest group (28%) included the studies with 100 participants or below, which mainly adopted qualitative research methods such as interviews and case studies (see also Figure 3).

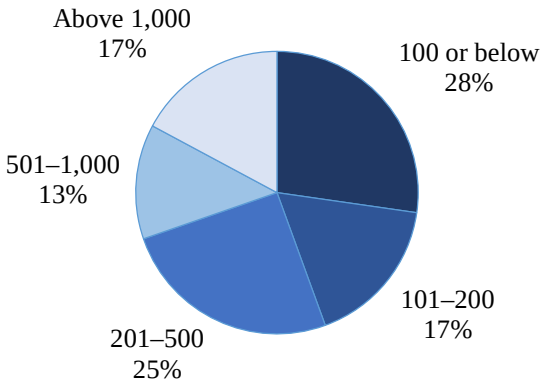

Figure 1. Proportion of the sample sizes of the studies.

Figure 2 illustrates the locations of the studies and the frequency count of the locations. The studies covered a total of 29 countries and regions, of which 46 studies were conducted in the United States, followed by 14 in Canada. These two countries accounted for over 50% of the studies. All the remaining locations involved less than 10 studies, and more than half of them had only one study. Although most of the studies were conducted in the North American context, the locations of the studies covered various continents in the globe.

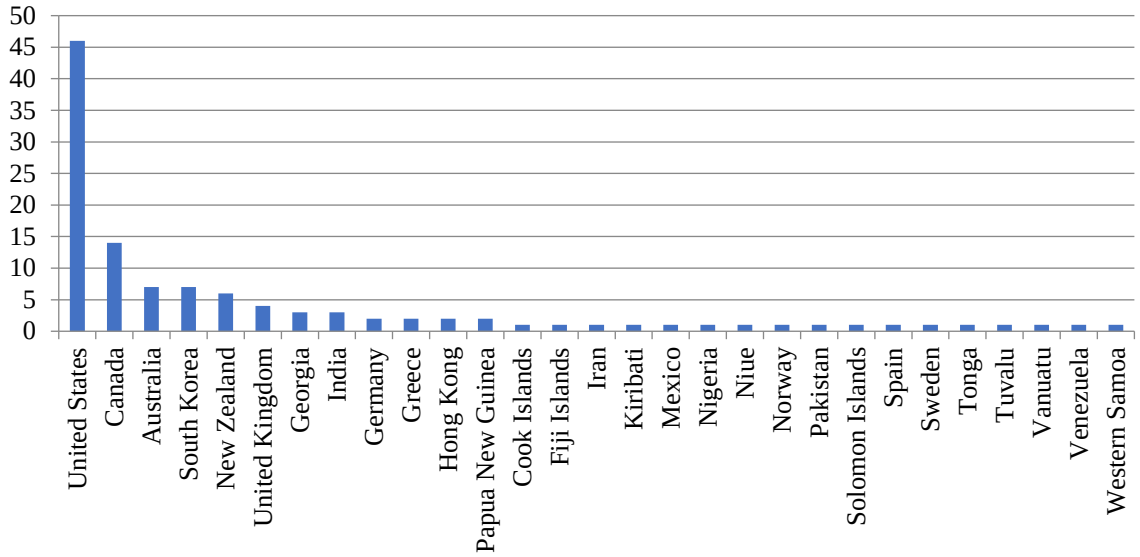

Figure 2. Frequency of the countries covered in the studies.

Figure 3 summarises the types of research methods used in the studies. Most of them adopted quantitative research methods, the majority using questionnaire surveys; and 23% analysed institutional data to identify potential factors related to student dropout. Common types of data included (a) student demographics, (b) course selection and completion records, (c) student logs on learning management systems, and (d) the completion of assignments. The remaining studies used qualitative research methods, most of them involving interviews (14%) and other methods such as case studies, content analysis of the reflections of dropout students, and the Delphi method (i.e., collection of experts' opinions from several rounds of communication). The student persistence factors identified from these studies were thus mainly based on empirical methodology.

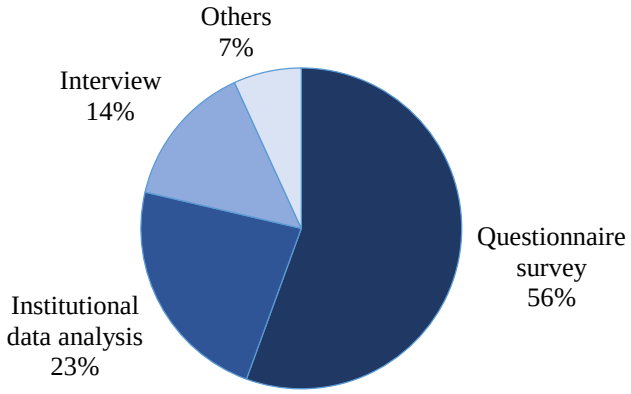

Figure 3. Proportion of the research methods used in the studies.

Factors of Student Persistence

Tables 2 and 3 provide a summary of the student factors before and after students' enrolment. The periods of time when the factors were identified in the literature are also indicated. The pre-enrolment student factors include the subcategories of (a) students' demographic factors, (b) psychological attributes, (c) prior educational experiences, and (d) prior knowledge and skills. The post-enrolment student factors include the subcategories of (a) planning, (b) managing and resource allocation, (c) psychological outcomes, and (d) academic outcomes. Some factors have been studied in different time

periods, such as students' locus of control and academic achievement. It is also clear that some factors were identified following the use of e-learning in open education, such as students' satisfaction with e-learning.

Table 2

Student Factors Affecting Persistence (Pre-Enrolment)

Student factors (pre-enrolment)		Periods of time when the factors were identified in the literature			
		1970s/80s	1990s	2000s	2010s
Demographic factors	• age	✓	✓	✓	✓
	• gender	✓	✓	✓	✓
	• geographic location	✓			✓
	• marital status		✓		✓
	• occupation		✓		
	• role in life/being parents				✓
	• being a migrant				✓
	• employment status				✓
	• enrolment status				✓
Psychological attributes	• locus of control	✓	✓	✓	✓
	• cognitive style	✓			
	• initial goal of study				
	- goal setting				✓
	- goal expectation	✓			✓
	- perceived value of the qualification/perceived utility of learning				✓
	- reason for taking/attending the course	✓			✓
	• concrete experience score		✓		
	• learning style		✓		✓
	• self-efficacy			✓	
	• self-motivation			✓	✓
	• love of learning			✓	
	• self-discipline			✓	✓
	• personal drive and determination			✓	✓
	• life-challenger			✓	
	• resiliency			✓	
	• expectations of the courses			✓	
Prior educational experiences	• prior experience with distance learning	✓		✓	✓
	• length of time since last college course	✓		✓	
	• recent completion of an online course		✓		
	• prior educational level		✓		✓
	• age when completing full-time education		✓		
	• perception of prior educational experience		✓		
	• credit transfer opportunity				✓
Prior knowledge and skills	• prerequisite knowledge/skills on the subject		✓		✓
	• high school achievement/pre-enrolment GPA			✓	✓
	• computer skills		✓		
	- prior computer skills training		✓	✓	
	- computer proficiency			✓	✓
	- computer confidence		✓	✓	

• time management skills		✓	✓	
• literacy		✓	✓	
• independent learners			✓	
• coping strategies			✓	
• ability to juggle family, work, and study			✓	
• study management skills			✓	
• test-taking and memory skills			✓	
• metacognitive self-regulation skills				✓
• learning approaches (deep approach, strategic approach, surface approach)				✓
• mathematic ability				✓
• English skills				✓

Table 3

Student Factors Affecting Persistence (Post-Enrolment)

Student factors (post-enrolment)		Periods of time when the factors were identified in the literature			
		1970s/80s	1990s	2000s	2010s
Planning, managing, and resource allocation	• investment of money	✓			✓
	• time management			✓	✓
	- availability of time	✓	✓	✓	✓
	- amount of time devoted to study	✓			
	- distribution of time for study	✓			
	- regular time for study		✓		
	- estimation of the time required			✓	
	• management of other resources				
	- study environment/designated place for study		✓		
	- household income and perceived financial security		✓		
	- financial aid/assistance			✓	
	• coping with various responsibilities			✓	
	• managing workload			✓	
	• achieving a balance among work, life, and study				✓
Psychological outcomes	• motivation (studying/learning goals newly developed)			✓	✓
	- clear goals		✓		
	- goal commitment	✓	✓		
	- progress towards completion of goals	✓			
	- perception of chances of success		✓		
	- perception of consequences of not passing		✓		
	• flow experience				✓
	• satisfaction		✓		
	- course satisfaction	✓		✓	✓
	- goal satisfaction	✓			
	- expectations met by course experience			✓	
	- satisfaction with e-learning/distance learning			✓	✓
	- satisfaction with the university experience				✓

	• perception of institutional commitment	✓			
	• self-esteem		✓		
	• impression of the course		✓		
	• commitment to the course				✓
	• social connectedness/sense of learning community			✓	✓
	• campus connectedness				✓
	• perceived stress and support				✓
Academic outcomes	• academic achievement	✓	✓	✓	✓
	• perceived academic performance	✓			
	• number of courses taken				✓
	• number of assignments completed	✓			
	• number of hours enrolled			✓	
	• class standing/academic experience				✓
	• perceived degree of learning			✓	✓

Table 4 summarises the institutional factors, including the subcategories of (a) design and delivery of programmes and courses; (b) interaction; (c) institutional support; and (d) other institutional factors (those that do not belong to the above subcategories). The periods of time in which they were identified suggest that institutional factors did not receive much attention in the early periods, as most of these factors were identified in the 2000s and 2010s.

Table 4

Institutional Factors Affecting Student Persistence

Institutional factors		Periods of time when the factors were identified in the literature			
		1970s/80s	1990s	2000s	2010s
Design and delivery of programmes/courses	• quality of the programme			✓	
	• quality of the courses		✓	✓	
	• course design		✓		
	- course structure				✓
	- course difficulty		✓	✓	✓
	- workload		✓	✓	✓
	- course length			✓	✓
	- schedule and pacing			✓	
	- flexibility of the course schedule			✓	✓
	- use of an online learning environment			✓	
	- match with students' learning styles			✓	
	- team-building activities			✓	
	- collaborative learning				✓
	- motivational design				✓
	- work-integrated learning				✓
	- type of assessment				✓
	- start date of the course				✓
	- elective or compulsory course				✓
	• instruction				
	- instructional design		✓		
	- instructional materials	✓	✓	✓	✓
	- communication channels	✓			
	- quality of online instruction		✓		
	- timely delivery of course materials			✓	
	- clearly-stated requirements			✓	

	- clarity of expectations				✓
	• content				
	- quality of the content		✓	✓	
	- relevancy to students' interests and work		✓	✓	
	- perceived usefulness of the content				✓
	• guidance for assignments				✓
Interaction	• interaction with teaching staff			✓	
	- tutorials	✓			
	- turnaround time	✓			
	- interaction with tutors via telephone	✓			
	- availability of tutors		✓		
	- instructors' teaching presence			✓	✓
	- instructors' feedback (timeliness, quality, and quantity)		✓	✓	✓
	- amount of course-related communication			✓	✓
	- students' attitudes to interaction with teaching staff			✓	
	- students' perceived usefulness of interaction with teaching staff			✓	
	• interaction with peers		✓		✓
	- peer contact/communication	✓			
	- students' feeling of presence of and support from peers			✓	
	- students' attitudes to interaction with peers			✓	
	- students' perceived usefulness of interaction with peers			✓	
	• interaction during the course				✓
	- class discussion			✓	
	- student participation in interaction			✓	
	- student participation in collaborative learning				✓
	- students' viewing of discussion posts and content pages			✓	
	- students' social presence			✓	
	- students' cognitive presence			✓	✓
	- faculty participation			✓	
	• students' initial contact with the institution from admission		✓		
Institutional support	• student support services				✓
	- provision of support services			✓	
	- availability of a local support centre	✓			
	- quality of services		✓		
	- timely support to students		✓		
	- office hours		✓		
	- personal contact for support				✓
	- general messages of support				✓
	- students' perceived availability of services			✓	
	- communication of course information			✓	
	- technical support			✓	
	- online academic advisors			✓	

	- study centre			✓	
	- prompt assistance/reply to queries				✓
	- effectiveness of advice				✓
	- financial aid, counselling, tutoring				✓
	• support from instructors/tutors		✓	✓	✓
	• library facilities		✓	✓	
	• provision of advice			✓	
	• online orientation			✓	✓
	• survey on students' readiness for distance study				✓
	• supportive learning environment				✓
Other institutional factors	• costs of study		✓		
	• knowledgeable and supportive staff				✓
	• employment status of faculty members				✓
	• ease of use of the learning system				✓
	• financial and academic penalties				✓

Table 5 presents the environmental factors, including the subcategories of (a) family factors; (b) work factors; and (c) other environmental factors (those that do not belong to the above two subcategories). The results show that environmental factors have been studied in different time periods. Some factors, such as students' family commitments, family support, and work commitments, have been continuously studied over time.

Table 5

Environmental Factors Affecting Student Persistence

Environmental factors		Periods of time when the factors were identified in the literature			
		1970s/80s	1990s	2000s	2010s
Family factors	• number of children	✓			✓
	• family commitments		✓	✓	✓
	• family support		✓	✓	✓
Work factors	• work commitments	✓	✓	✓	✓
	• employment dislocation	✓			
	• professional activities during study	✓		✓	
	• attitude of employer and workmates		✓		
	• employer's support			✓	
	- financial support		✓		✓
	• support from colleagues			✓	
	• employment change			✓	
	- change in work environment		✓		
	- promotion/job transfer		✓	✓	
	- new employment/launch of business/extra responsibility			✓	
Other environmental factors	• unexpected life events/change in life circumstances (e.g., illness, divorce)	✓		✓	
	• other educational opportunities	✓	✓		
	• additional commitments	✓			
	• events which hinder study		✓		
	• social life		✓		

• friends' support	✓	✓	
• social obligations		✓	✓
• study environment		✓	✓
• computer access		✓	

Changes and Trends in the Student Persistence Factors

Figure 4 illustrates the changes in the proportion of the three groups of factors among the various periods of time. Student factors were the largest group in all the time periods (covering a total of 131 out of the 284 factors), despite there being an overall trend for a decline in their proportion studied from 58% in the 1970s/80s to 47% in the 2010s. On the other hand, the proportion of institutional factors has been increasing and has become comparatively as important as student factors in terms of the frequency of being examined. Finally, the proportion of environmental factors has been decreasing, and only 9% of the factors studied in the 2010s belong to this group (compared to 20% and 22% in the 1970s/80s and 1990s, respectively).

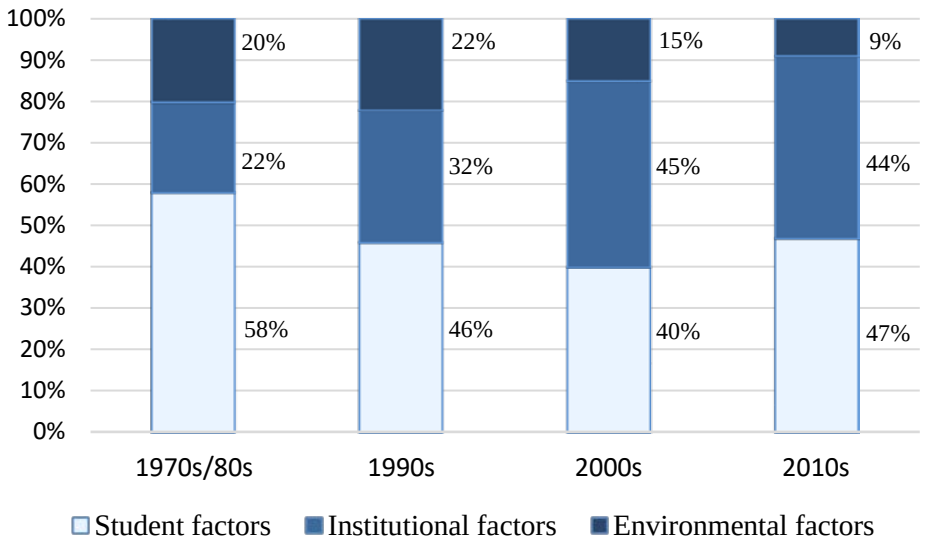

Figure 4. Proportion of the frequency of the three factor groups in various periods.

Figures 5 to 7 show a breakdown of the frequency counts of the factors. Student factors (Figure 5) belonging to prior knowledge and skills were not studied until the 1990s. Some subcategories of factors, such as demographic factors and psychological attributes, have been increasingly examined in the past two decades. Among the subcategories, the factors most frequently studied were related to students' psychological attributes and outcomes.

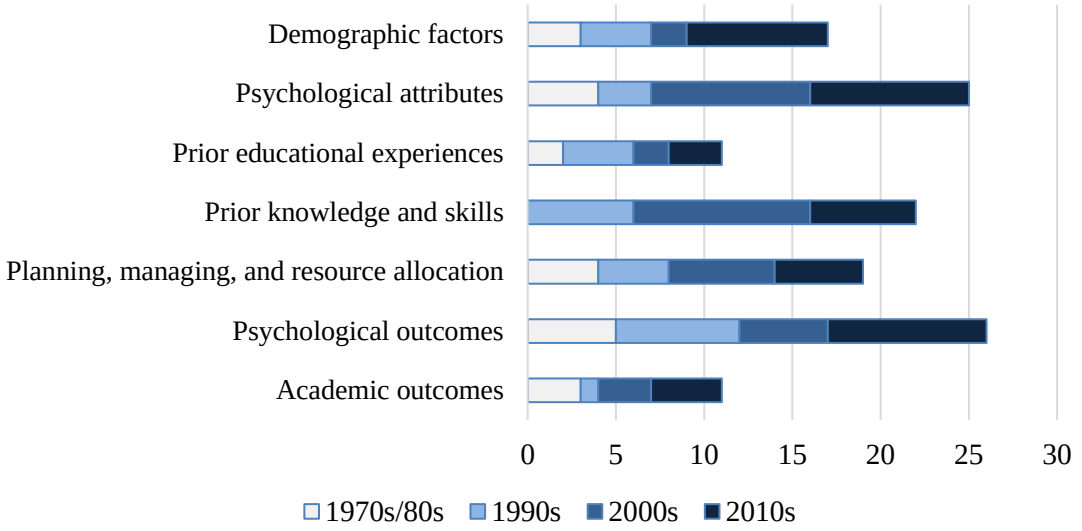

Figure 5. Frequency count of the subcategories of student factors in various periods.

For institutional factors (Figure 6), those related to the design and delivery of programmes and courses were the most frequent, with this growth in frequency being substantial, particularly in the 2000s and 2010s. The factors related to interaction and institutional support also demonstrate a very significant growth in the past two decades, which explains the increasing proportion of institutional factors among all the student persistence factors, as shown in Figure 4.

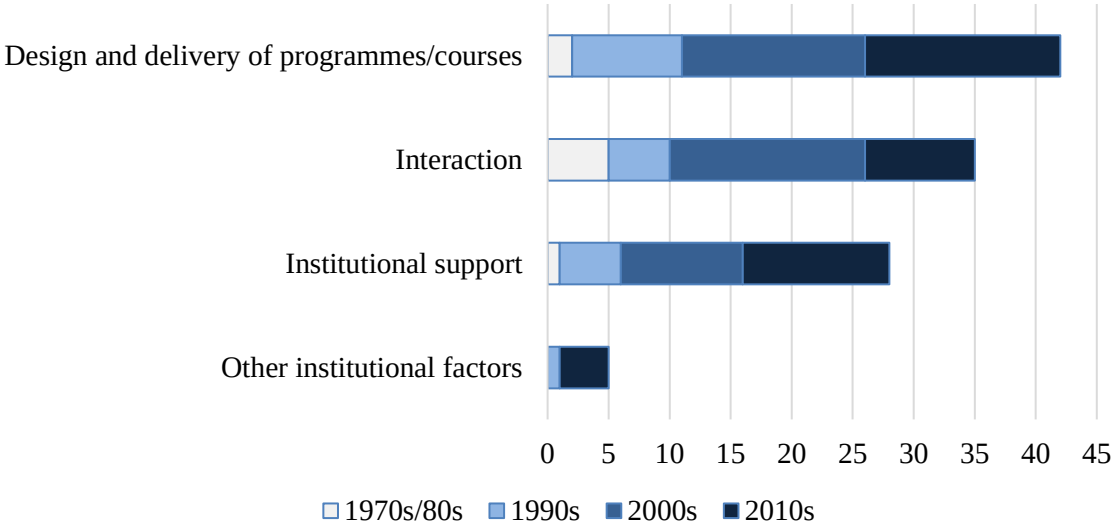

Figure 6. Frequency count of the subcategories of institutional factors in various periods.

The environmental factors (Figure 7) related to work are the most frequent. It is worth noting that this subcategory was studied most in the 1990s and 2000s, while in the 2010s relatively fewer new factors were identified. Also, many of the environmental factors became diverse and could not be categorised into family or work factors as shown in Figure 4, and therefore there is a large subcategory of other environmental factors.

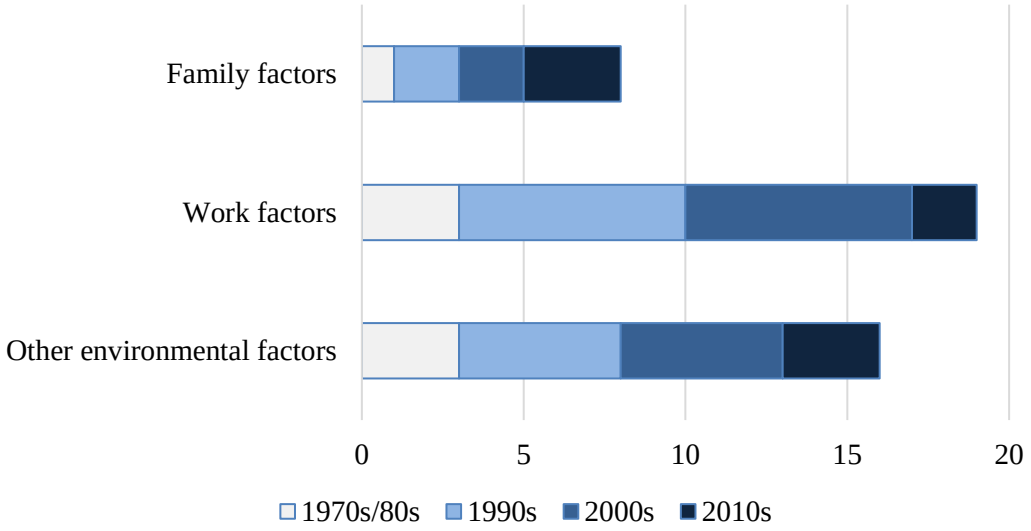

Figure 7. Frequency count of the subcategories of environmental factors in various periods.

In general, the number of factors has been increasing during the past few decades. As well, factors in some subcategories have become more sophisticated with time. For example, factors related to psychological outcomes studied in the 1970s/80s were concerned with more general concepts such as motivation and satisfaction, whereas in the 2000s and 2010s more specific concepts such as sense of community and flow experience were studied. Likewise, the major concern about the design and delivery of programmes and courses was general and related to the quality of the course materials in the 1970s/80s, but in the 2010s, it became more detailed and addressed pedagogical issues such as collaborative learning.

Some factors have been continuously studied in all the various time periods (e.g., the timeliness, quality, and quantity of instructor feedback). Time management has also been a long-lasting problem encountered by students studying in open universities, and has been examined since the 1970s/80s. Distance learners from different cohorts have faced similar challenges in the form of obligations competing with study for their time, energy, and financial resources.

Conclusions

This paper presents a comprehensive review of factors related to student persistence in open education. It covers the relevant literature in past decades along with the development of open universities. To our understanding, the numbers of relevant articles (108) and factors (284) identified are the highest among review studies. The analysis of the scale, location, and research method of the studies shows that a rich diversity of study contexts has been covered. The results reveal the changes and trends in the student persistence factors over various periods, and the ways in which the factors could be interpreted using relevant models and frameworks. The results contribute to informing the development of retention and intervention strategies for student persistence and potential future studies in the open education context.

Implications of Student Persistence for Open Universities

Intervention and retention strategies could specifically focus on the three major categories of student

persistence factors—student, institutional, and environmental factors. Lee and Choi (2011) also suggested that the strategies could focus on "understanding each student's challenges and potential, providing quality course activities and well-structured supports, and handling environmental issues and emotional challenges" (p. 593). However, the evolution of open education delivery and the identification of new factors have led to the need to formulate new or refined strategies to cope with the changes.

This study shows that institutional factors have recently become one of the most frequently examined groups of factors. Compared with the student and environmental factors, it is expected that open universities have relatively more control over institutional factors, particularly those related to course design and delivery, and institutional support. Therefore, the formulation of strategies could focus more on this area. In particular, Simpson (2013) claimed that the loss of motivation to learn is the main factor causing student attrition, and should be emphasised in retention strategies for open universities. In this regard, Pittenger and Doering (2010) reported the incorporation of motivational design—an instructional design approach to attract students' attention, build their confidence, establish relevance to their lives, and enhance their satisfaction (Keller, 1987, 1999)—into the development of online courses, and showed that the motivational design features had a positive impact on course completion rates. Their work demonstrated that some student psychological factors, such as learning motivation, could be addressed through institutional efforts in course design and delivery.

The other subcategories of institutional factors related to interaction and institutional support have also been increasingly studied in recent decades. Despite their significance for student persistence being recognised, cost-effectiveness issues for providing such kinds of intervention have also been raised; cost increases with the number of students (Tait, 2015). Simpson (2013) claimed that these interventions (e.g., personalised contact with at-risk students) are financially viable if the interventions are well-designed, since the additional institutional income from increased student success outweighs the cost of intervention. Also, Choi, Lam, Li, and Wong (2018) proposed a series of systematic proactive intervention strategies to strive for a balance between cost and effectiveness. Intervention strategies are adjusted according to students' risk level, ranging from the least expensive intervention methods (e.g., reminder e-mail) to more effective ones that are normally more costly (e.g., personal consultation).

In terms of the proportion of studies, relatively fewer have focused on environmental factors. This may be related to the nature of these factors, which makes institutions' ability to influence them negligible. As a possible consequence, only a limited number of strategies have been suggested that address these factors. Lee and Choi (2011) noted that no strategies had been found for addressing some environmental factors, such as increased work commitment.

A similar situation applies to the student factors. Although the largest group of factors, some of them, such as student demographics and prior experiences, can hardly be managed by institutions. Furthermore, the student factors identified in recent periods have been more specific in nature, many of them concerned with learners' psychological or cognitive attributes, such as metacognitive self-regulation skills, flow experience, and self-efficacy. Tait (2015, 2018a) commented that the open admission policy of open universities, together with their social justice and widening participation imperatives, further broaden students' background, making it difficult for institutions to accommodate their diverse needs. Addressing factors which have changed over time may require revisiting and revising the existing intervention and retention approaches developed to deal with an earlier understanding of student persistence.

Lee and Choi (2011) advocated the need to further study the interrelationship among diverse dropout factors, so that retention strategies can be formulated more holistically. For example, the work of Pittenger and Doering (2010) mentioned above addressed a specific student factor—motivation—through an institutional factor, incorporating motivational design into online courses. Au et al. (2017) presented another initiative which compared students who were successful in distance learning with those who were at risk of dropping out, regarding their attitudes to challenges in learning and ways to handle these. Their findings showed that the successful students also had diverse backgrounds and encountered challenges in relation to the environmental factors, but they had a more positive attitude than the at-risk students and found ways to actively manage their learning. Choi et al. (2018) thus recommended helping at-risk students to gain peer support from successful students.

In particular, the use of learning analytics has been viewed as a promising approach for identifying and predicting at-risk students and learning problems so that proactive intervention can be carried out early (Choi et al., 2018). As reviewed in Wong (2017), learning analytics has brought benefits for higher education institutions in terms of (a) improving student retention; (b) supporting informed decision-making; (c) increasing cost-effectiveness; (d) understanding students' learning behaviours; and (e) providing personalised assistance for students, including timely feedback and intervention. Learning analytics is also an emerging practice for open universities and MOOCs to inform the formulation of student retention strategies. Some initiatives have already taken place. For example, Rienties et al. (2016) presented an analytics framework at the UK Open University for facilitating tutors to select appropriate intervention methods for students predicted as being at risk. Greene, Oswald, and Pomerantz (2015) analysed MOOC data and found predictors of retention such as learners' level of commitment and intention to obtain a certificate. Yet, as Wong (2017) observed, very few studies have provided empirical evidence showing how intervention based on learning analytics was conducted and how effective it was in terms of retention.

Therefore, it is apparent that much remains to be done on making learning analytics more mature for open education. Features of open and distance education, such as open admission and limited face-to-face interaction, are yet to be adequately studied in relation to learning analytics practices. However, collecting data about student factors, such as students' psychological or cognitive status, in an online learning environment has been found to be challenging (Brown & Kinshuk, 2016). The new findings on student persistence thus demonstrate a need for advancing data-intensive/dependent prediction and intervention approaches that take those persistence factors into account.

Limitations and Future Studies

This study surveyed comprehensively the factors related to student persistence in open universities. Despite the findings showing the factors identified in the literature and their changes over the years, this study also had several limitations, as noted below.

First, the study covered only the factors reported in peer reviewed journal articles, and did not include the so-called grey literature such as conference papers, book chapters, and technical reports. This approach has the benefit of ensuring the quality of the studies reviewed, and aligns with that adopted in other reviews such as Krull and Duart (2017) and Hwang and Tsai (2011). However, it may have what Bernard, Borokhovski, and Tamim (2014) referred to as publication bias, as some relevant literature may not be covered in this review study.

Second, only articles written in English were included and, as shown in the results, the studies reviewed were mostly conducted in the North American context. Studies conducted in other open education contexts and reported in languages other than English, if any, were not covered.

Third, the analysis was based on frequency count of the factors reported in the literature. This approach was also adopted in relevant studies such as Hew (2018), Lee and Choi (2011), and the Government of Western Australia (2006) for presenting the differences in the proportion of various factors. However, Peltier, Laden, and Matranga (2000) pointed out that the previous research on the factors revealed more about the researchers' interests than their significance. The results of this study show the research trends in this area, but because factors were not being studied in a particular period of time does not mean that the related student persistence issues did not occur in that period.

Therefore, future studies should analyse further the student persistence factors. There is a need to evaluate the levels of significance of the factors in influencing students' persistence decisions. Identifying the more significant factors will help open universities to prioritise their retention efforts. There is also a need to examine the student persistence issues particularly in the open education contexts where relevant studies are less reported in English or journal articles, so as to better understand the contextual diversity of the issues.

Also, the factors identified so far require a more comprehensive theoretical foundation to conceptualise their interrelations and effects on student persistence. It has been emphasised that the factors are not independent but interrelated with each other (Lee & Choi, 2011). This calls for further work or new development of student persistence models tailored for open education that account for the factors studied in recent decades.

Acknowledgment

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Rethinking Open Universities: What Makes Them Unique?

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Abstract

This paper considers the current state of the United Kingdom Open University (UKOU) and the implications for the evolution of higher education, whether through open or traditional institutions. Although 50 years have passed since the establishment of UKOU, the first open university, such institutions seem to be losing their ground, notably because they face challenges in creating a clear identity for themselves. By definition, they have been distinguished from traditional universities by offering both open access and open admission. However, some cases of open access (i.e., distance teaching through the adoption of various technologies) are found in China, South Africa, the USSR, and the US. Even so, the introduction of open admission policies can be considered a core feature of open universities. Such policies have been criticized for creating a so-called revolving door, with students failing almost immediately. To counteract this, UKOU developed a particular quality assurance system, which allowed them to be an authoritative higher education institution. Specifically, they structured regional networks with shared responsibilities, to offer all the elements that make up a university including headquarters, regional offices, and even spaces for students. This form of networked university is what differentiates open universities from the traditional university model and constitutes a unique feature of this type of educational institution.

Keywords: open universities, open access, open admission, quality assurance, networked university

Introduction

It has been 50 years since the establishment of the United Kingdom Open University (UKOU). Since then, UKOU has been introduced as a university model directly or indirectly in a number of countries, which have established their own open universities. However, UKOU, the original open university, has been undergoing significant changes while its identity has also been threatened. The majority of its regional offices, which were responsible for direct education and student support, have been closed. Also, in 2018, a large number of faculty members were made redundant. The university has been suffering from financial difficulties for some time, especially as a result of government funding changes for part-time students. While these kinds of changes may be inevitable, they have raised the concern that "the OU as we know it" (Swain, 2015, para. 4) will be destroyed and reduced to being "a digital content provider" (Taylor, 2018, para. 4, 11). Although it is unclear what constitutes the 'OU as we know it' exactly, the changes seem to be threatening the university's identity.

Open universities have long agonized over their identity, because of how they differ from more traditional university models. When the OU was established, many greeted it with skepticism, scorn, and ridicule (Perry, 1977, pp. 18–19). There have been studies about its efforts to become "a real university" (Student Research Centre, 1986, p. 14), distinguishing UKOU from "genuine universities" (Keegan & Rumble, 1982, p. 246). As UKOU was a new type of university, it had to prove how it was different from conventional universities, including the specific advantages it offered, as well as how it could, nevertheless, be an authoritative academic institution like a traditional university.

Today, open universities are destined to ask themselves the same questions again. In the past, the cause for self-questioning was to distinguish between the two types of institution, but now, the differences between conventional and open universities are disappearing. The open university model has spread around the world and has been able to attract numerous students, and gain recognition and credibility. However, with the introduction and development of information and communication technology (ICT), the boundaries between traditional universities and open universities have started to disappear. Traditional universities are developing and offering more courses online, replacing some conventional undergraduate or graduate courses and credits. The emergence of these competitors was foreseen some time ago (Raggatt, 1993). More recently, Tait (2018, pp. 14–15) argued that the first-mover advantages that were once enjoyed by open universities have already been eroded due to the emergence of new competitors. According to Tait, at least four open universities in Europe have been threatened with closure or mergers, either because of new, competitive challengers and/or perceptions of their own poor performance. Many open universities are experiencing both a decline in student enrollment and a loss of the monopoly position they previously enjoyed in the market, leading to financial difficulty in some cases (Garrett, 2016, p. 41).

The purpose of this paper is to elucidate the core features of open universities and their particular structure for quality assurance by revealing the fundamental differences in their educational model compared to that of conventional universities.

Methodology

This research focuses on UKOU, which is generally considered representative of open universities worldwide. The estimated number of full-fledged open universities varies according to researchers or time of publication; for example, 72 universities are recognized by Jung (2006, pp. 58–59) and only 50 by Tait (2018, p. 14). Among these institutions, UKOU appears to be the most influential prototype model for open universities (Daniel-Gittens, 2016, p. 884; Open University, 2000, p. 2086). Also, according to Ramanujam (2009, pp. 31–32), the success of UKOU has inspired policy-makers in various countries to establish their own institutions: (a) Thailand (established in 1971, 1978); (b) Pakistan (1974); (c) Malaysia (1980); (d) Sri Lanka (1981); (e) South Korea (1983); (f) India (1985); (g) Bangladesh (1988); (h) Hong Kong (1990); and (i) Singapore (1991). Research concerning specific details on the influence of UKOU on other open universities, however, remains insufficient. Meanwhile, it should be noted that this study mainly focuses on the educational function of open universities rather than their research function.

This study relied mostly on a literature review. First, it considered the concept, the historical facts, and the current issues of UKOU specifically, through reviewing an extensive range of literature, including academic resources, autobiographies, encyclopedias, governmental reports, and newspaper articles. Second, it explored studies on conventional universities to provide a comparative framework for the idea of an open university. For the conventional university, this study relied mainly on Kerr (2001), who put forth three representative ideas of traditional universities, namely a university, a modern university, and a multiversity. Even though Kerr's work began with the idea of a university in the 1850s, this starting point is adequate to describe the transition of ideas of conventional universities from the 1960s, when UKOU as the first open university was about to emerge and be established, to the present. Meanwhile, for open universities, this study considered Peters (2001) who provided insights into the idea of an open university, with specific focus on the processes and forms of production in distance education. In addition, Brubacher's (1977) work on open admission from the perspective of conventional universities, which also constitutes one of the features of open universities, was reviewed.

Definition of Open University

UKOU, the world's first open university, was founded in 1969. Since then, other universities, inspired by its success, have been established all over the world. A number of higher educational institutions also included the term open university in their names (McCulloh, 2008, pp. 418–419). Universities such as Allama Iqbal Open University in Pakistan and Indira Gandhi National Open University in India referred to themselves as an open university from the very beginning. Meanwhile, some institutions changed their titles only relatively recently, such as the Korea Air and Correspondence University, now known as Korea National

Open University (as of 1994); the University of the Air, now known as The Open University of Japan (as of 2007); and the China Central Radio and TV University, now The Open University of China (as of 2012). Even if some institutions do not include open university in their name, some, such as Athabasca University and the Tele-Université in Quebec, are considered open universities (Daniel & Smith, 1979, p. 64). Several open universities have started to form a single identity and community. One representative example is the Asian Association of Open Universities (AAOU), which was established in 1987. Some of the association's member institutions do not have open university in their name, and some are distance education departments at traditional universities. However, the member universities, especially those whose name contains the words "open university," seem to share a common identity as open university to a certain extent.

In fact, the definition of what constitutes an open university is well established. According to the Cambridge Dictionaries and the Oxford Dictionaries, the lexical definition of an open university is, "[in the UK], a university that teaches mainly by broadcasting, correspondence, and summer schools, and is open to those without formal academic qualifications" (Cambridge University Press, 2018, para. 1) and "in the UK, a university that usually accepts students without formal qualifications and allows them to study from home, receiving and sending work by post, by email, or over the internet" (Oxford University Press, 2018, para. 1). These definitions refer to a specific open university in the UK, but they are also definitions that characterize open universities more generally. A more specific definition can be found in Daniel-Gittens (2016), who wrote that "open universities are geared toward reducing barriers and increasing university access for adult learners who were previously excluded from attaining a university education and are characterized by several features" (p. 883). Daniel-Gittens also suggested that open admissions process and flexible delivery models are core elements of open universities. These two features can also be described as open admission and open access, respectively, and are also referenced in other literature. The original inspiration of UKOU, which can be considered a prototype of open universities, was the following: the openness of the university in respect to (a) people, since it would not debar applicants on account of their lack of educational qualifications; (b) place, in the sense that learning would be home-based and not restricted to classrooms or a campus; (c) the use of new methods of teaching; and (d) ideas (Rumble & Keegan, 1982b, p. 12). From among these, the first represents open admission and the second represents open access.

In the 1970s, Rumble and Keegan (1982a, pp. 206–207) conducted a comparative study of the characteristics of the then established open universities, including UKOU. They used the term distance teaching universities in their study, but it can be regarded as equivalent to open universities as described in this paper because the institutions selected for Rumble and Keegan's (1982a) study were mainly inspired by UKOU. They observed two main sets of shared characteristics of those universities, namely that (a) that distance teaching reached a new target group of adults who, for a variety of reasons, have been unable to study at a conventional university or who wanted to study at the same time as they continue in full-time employment; and (b) that no formal educational qualifications were required of applicants, and only the normal minimal entrance requirements for universities in their country must be met.

Core Features of Open Universities

Open access is a term that signifies that admittance, usually to higher education, is guaranteed at any stage of life, and regardless of the student's location and time availability. One way to ensure this access without any limitations is through distance education, often thanks to the use of advanced technology. People can go to university whenever they choose and wherever they are living. To participate in distance learning, it does not matter if students have a full-time job, are disabled, bringing up a child, or even imprisoned. However, these features are not indigenous features of open universities. There were higher education institutions offering distance learning degrees even before UKOU was established. For example, there is evidence that the Peking Television College in China already used television (Abe, 1961, p. 159) prior to 1969. Similarly, it is also widely known that distance education had already been adopted at higher education institutions in South Africa, the USSR, and the US before the founding of UKOU, and, indeed, some of these institutions had an effect on the establishment of UKOU itself (Briggs, 2001; Crines & Hickson, 2016; Perry, 1977; Kanwar & Daniel, 2010; Rumble & Harry, 1982; Simonson, Smaldino, & Zvacek, 2014; Weinbren, 2015). That is, while distance learning at traditional universities may have been given little attention compared to the conventional segment, it does not mean that the open access segment did not exist at all. Open access can be considered as one of the fundamental characteristics of open universities. However, new technologies are constantly being introduced in all sectors of higher education. In recent years, open access has been emphasized through the introduction of ICT at traditional universities. A number of conventional universities now design online courses, offering them to their own students as well as to the general public, sometimes providing recorded classroom instruction with further educational resources on the Internet. Thus, distinguishing between open and traditional universities is set to become more difficult in the near future. From the perspective of open access, open universities may no longer be distinguishable from other universities just because they feature a distance teaching element.

The crucial and defining difference between open universities and traditional universities will be the open admissions factor that allows people to attend universities with or without the same minimum entrance requirements as independent universities. In the UK, where the first open university was established, there have been attempts to provide more higher education opportunities for the public than in the past. Yet these opportunities were mostly limited to qualified people. British higher education was monopolized by the ancient universities, such as Oxford and Cambridge, for centuries, but the foundation of the University of London in 1836 contributed to ending the monopoly. The University of London also ran an external degree program, allowing students in remote locations to obtain a university degree if they were able to pass the university's examinations. People were able to study at colleges in their area as well as by themselves and could take the examinations at provincial examination centers. This tradition was inherited to build the structure of UKOU (Bell & Tight, 1993, p. 128). However, there is the view that London's external degree model could hardly be characterized as a full university, but that it constituted a federation (Flexner, 1994, p. 5; Kerr, 2001, pp. 231–232). The reason is that the university had administrative functions only, with educational functions entirely outsourced to external colleges. Thereafter, in the 1960s, through the Robbins Report (Robbins, 1963), the expansion of higher education opportunities for school leavers, based

on the national need for trained brain power and egalitarianism, was emphasized. As a result, more universities were created.

At about the same time, UKOU was established especially for adults. Jennie Lee, one of the government officials involved in the foundation of UKOU, envisioned an independent university which had no requirements for entrance qualifications (Perry, 1977, p. 13). Lee's ideas were accepted; enrolment as a student of the university was open to anyone as long as the registration fee was paid, irrespective of the student's educational qualifications and with no formal entrance requirement being imposed (Department of Education and Science of the UK, 1966, p. 6). However, it is unclear how exactly the process of open admission was developed and received approval. The principle is not found in any of Harold Wilson's speeches that disclose the plans for the establishment of UKOU, nor in any record of the principle having been put to Lee by any political person or organization. It is still uncertain how she came up with the idea of open admission, but it does seem to have been her own proposal.

Open admission may not be completely unique to open universities. Conventional universities such as the City University of New York introduced open admission in 1969 and then abolished it in 1999. However, open admission was generally considered an unacceptable concept for conventional universities. In considering its appropriateness, Brubacher (1977, pp. 61–73) discussed (a) who higher education should be for, (b) whether it is a right or privilege, (c) which should be put first between meritocracy and egalitarianism, and (d) eventually, whether open admission could be realized or not. The discussion emerged in the context of the popularization of higher education in the US at that time. Brubacher himself had doubts about the practicality of open admission and stressed the importance of academic talent, arguing that university admission should be prevented from becoming a "revolving door" policy that admits students as freshmen and then results in them failing and withdrawing almost immediately (Brubacher, 1977, p. 65). In other words, Brubacher's main concern about open admission was its potential impact on quality assurance.

Quality Assurance System for a New University Model

The ability of open universities to guarantee a certain level of quality education is directly related to the question of whether they can hold as much authority as conventional universities do, a question that has yet to be satisfactorily answered. When the idea for the establishment of UKOU was originally announced, British politicians and the mass media were doubtful about remote teaching and regarded it a "gimmick" or an "unrealistic idea" (Perry, 1977, p. 18, 33). Student Research Centre (1986, p. 14) wanted itself to be considered a "real university," not a correspondence college, with Keegan and Rumble (1982, p. 246) questioning if universities like UKOU are "genuine universities." Ramanujam (2017) argued that until 1995, open universities had major challenges with respect to being accepted by learners, society, and the job market on quality grounds, among other things. Perraton (2007, p. 207) insisted that there were two contesting views on open and distance learning. The first view held that the growth of open and distance

learning is something that has provided education to thousands, even millions, for whom it would otherwise not have been available; the second view is that open and distance learning is regarded, by students and ministries of education alike, as a second-rate system, which offers a shadow of education while withholding its real substance. It is difficult to determine whether or not open universities fully represent the values of a genuine university and a first-rate system, because this consideration extends to fundamental and complex questions, such as what is a university, exactly. What is more important here is the issue of what it is that generally allows institutions to be recognized as a genuine university. Surely, quality assurance must be one of the grounds of such recognition.

In order to consider the issue of quality assurance in open universities, the fact that their educational structure is fundamentally different from traditional universities has to be taken into account. Kerr (2001) suggests that three representative types of universities have existed thus far: the university, the modern university, and the multiversity. A university was proposed by Newman (2014), with Oxford constituting an example, as being isolated from secular society and focused on an educational, but not on a research, function. A modern university, as described by Flexner (1994), refers to a university, such as the University of Berlin, that emphasizes the importance of research and teaching at the same time. Finally, a multiversity, as defined by Kerr (2001), refers to a large-scale university, such as the University of California, that receives an enormous amount of research funding from government and national corporations. Flexner defines a modern university as an organism whose different parts all have a close relationship with one another (as cited in Kerr, 2001, p. 15). However, the multiversity differs a bit. While there are numerous communities within it, the relationship among them is weak. Instead, it is the pluralistic value of those communities that is respected. Kerr (2001) likened the different models to “a village with its priest,” “a town-a one-industry town-with its intellectual oligarchy,” and “a city of infinite variety” (p. 31).

Open universities are close to the concept of a university in the sense that most of them concentrate on the educational function. On the one hand, there are tens of thousands, to millions of students studying at such institutions and they constitute a number of communities as pluralism is naturally respected. In this respect, open universities may be similar to multiversities. However, open universities can also be seen as a fundamentally new type of university with less continuity compared to the relationships that exist among other university models. Peters (2001, pp. 110-111) suggested that the structure of distance education is characterized by industrialized form of learning and teaching, that is by (a) a division of labor, (b) mechanization, (c) standardization, (d) normalization, (e) formalization, (f) objectivization, (g) optimization, (h) mass production, and (i) consumption. Peters insisted that the concepts of the structure of industrialized teaching and learning was confirmed by the work of the distance teaching universities founded since the 1970s, above all the Open University (2001, p. 111). He argued that the educational structure of open universities targets a mass audience and has a technological basis, whereas the educational structure of conventional universities can be described as family-like, having small group structures, personal communication, and time-place-person ties (Keegan, 1996, p. 83).

Peters's theory developed into a debate about the Fordism strategy, the neo-Fordism strategy, and the post-Fordism strategy. The Fordism strategy was described as a fully-centralized, single-mode, national distance education provider, gaining greater economies of scale by offering courses to a mass market. The neo-Fordism strategy extended the Fordist system by allowing for much higher levels of flexibility and diversity. The post-Fordist strategy was characterized by high levels of all three variables: product innovation, process variability, and labor responsibility. As opposed to neo-Fordism and Fordism, it dispensed with a division of labor and rigid managerial control, and deliberately fostered a skilled and responsible workforce (Campion, 1995; Campion & Renne, 1992). These strategies can appear simultaneously, but the educational structure of open universities, at least, seems to be closest to the post-Fordism strategy. Open universities basically have a so-called headquarter-peripheral structure through having regional networks in addition to their headquarters.

The post-Fordism strategy represented the fundamental difference of educational structures between open and traditional universities. It also gave rise to a different kind of a quality assurance method between both types of universities. Fallis (2007) stated that the university has always been a "place" (p. 219). Traditional universities never seem to have considered the fact that they could be validated without this sense of place. Even if they were able to choose to not be based in certain places, they could not have existed without having proper physical locations; traditional universities would have been unable to guarantee the quality of being a university if they left their campuses for other locations, whether a town or a city. The physical existence of traditional universities may be likened to points on a map, while the structure of open universities would be geometric planes. In short, traditional universities have physical campuses which consist of administrative, educational, research, and student facilities. Universities are where faculty, students, and administrative staff gather, and where educational, research, administrative, and even residential and commercial functions operate within or around their grounds.

On the other hand, open universities do not require all of these facilities nor do university members come together in the same place. Instead, these functions are dispersed to regional offices and each individual student. Educational resources are delivered to each student directly, and lectures are given through various media. Regional offices are set up in certain areas as decided by each open university, with each office being responsible for teaching and managing the students living in a particular area. An open university is dispersed and its separated elements—students, regional offices, and headquarters—exist as a number of points. These points form a gigantic and imaginary plane, wherein the media becomes a line. The media acts as a bridge between each student and the university, however, the media does not take any responsibility for quality assurance. Instead, the responsibilities of assuring quality are divided up among the different elements other than the headquarters. Each regional office plays a role in assuring quality through contact with their students, such as through face-to-face tutorials, counselling, and assignments. Depending on the exact policy of each open university, regional offices may provide facilities such as community spaces, libraries, and computer rooms just as traditional universities do. Furthermore, individual students also factor into ensuring open universities' authoritativeness as they need to be more deeply involved in their learning (e.g., by creating learning environments for themselves, and managing

effective study plans and methods independently) significantly more so than students of traditional universities. In this structure, a plane is not generated but a number of points can be connected over any great distance as long as a line reaches students. Distinct from conventional universities, this shared responsibility structure is a decisive feature of open universities. Meanwhile, this structure can also describe that open universities operate on the basis of the same principle as the World Wide Web, as a myriad of components is connected to each other to form a single network. From this perspective, open universities can be conceptualized as a networked university.

In addition, acknowledging this non-physical-based network as constituting an authoritative university is necessary in order to successfully characterize an open university. This feature reveals the significance of media technology, which is not only a tool for open access as described above, but it may be that media itself is where an open university is located. In other words, an open university is a university embedded in media. Due to their willingness to embrace media technology—starting 50 years ago with TV and radio broadcasting and currently using the Internet and application-based modes—open universities may be defined within the media itself as opposed to traditional and physical bricks-and-mortar schemes.

Conclusion

Open access and open admission have often been listed as what defines open universities. Tait (2008, p. 85) used the term open universities to explain "innovative distance-teaching higher education institutions that have used distance in radical ways to improve openness." It seems common to link open universities with the word innovative. However, if there is something truly innovative about open universities, it would be the application of open admission to higher education, rather than adopting the latest media technology. Open access developed alongside the higher education sector and reached its apex with the emergence of open universities. It cannot be characterized as being exclusive to them. Thus, the essence of open universities is that they have an open admission policy as independent institutions of higher education, as well as a distinctive quality assurance system, which is comprised of the headquarters, regional offices, and even students, who share responsibilities for its quality. This system enables open universities to adopt an open admission policy at the higher education level. Both the policy and the system are rarely found at conventional universities and therefore can be seen as aspects that make open universities unique.

There remains much to consider beyond the scope of this paper. First, the procedure of forming the open university model and of accepting open universities in each society have not yet been fully revealed. Keegan and Rumble (1982, p. 243) stated that all non-traditional educational structures are characterized by fragility. According to them, open universities may never have held the same authority as conventional universities do in our societies, which may explain why they have had issues with being recognized as being authoritative, as mentioned above. To dispel those concerns, further research need to be done from the perspective of the more traditional ideas of what constitutes a university. Furthermore, the complex dynamics that surround open universities, such as society, politics, and even media development, should

be considered in future studies. Second, the distinct identity of open universities may offer implications for the entire higher education sector. Kim (1994, p. 147) observed that in times of less developed typography, the dissemination of textbooks was restricted so that teachers and students naturally gathered together in one place to create the medieval universities. On that basis, Kim insisted that universities may not need to exist in the information age, since personal research and the delivery of knowledge can now be done through highly developed information media. Nowadays, not only open universities, but also traditional universities are adopting advanced media technology competitively and, whether intentionally not, traditional universities are partially emulating open universities. Their development of online courses, such as the massive open online courses (MOOCs), looks analogous with the structure of a networked university, with the difference being that they build the majority of their virtual regional offices on the Internet. This is a system that assures the quality of distance education, and consists of a collaboration of the online and offline learning environment as seen in open universities. In that sense, it can be considered that open universities have been sent to the front line in the battle to change higher education. Therefore, it will be important to take note of how technological developments will change open universities in the future (i.e., whether they remain as a digital content provider or not). Not only does it offer clues to understanding the changing meaning of universities or even degrees, but also suggests a direction for the future of traditional universities in the information age.

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Open Universities and Open Educational Practices: A Content Analysis of Open University Websites

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Abstract

The purpose of this study is to provide an overview of how open universities depict their current institutional engagement in open educational practices. In view of the growth of programming for non-traditional students by conventional universities, particularly through online learning and increasing interest in open educational practices, the intention is to gain a better understanding of the unique contributions currently made, or potentially to be made, by open universities in comparison to conventional universities. The study is conducted through a content analysis of open university websites, exploring key themes related to access-oriented open educational practices derived from terms and related concepts in relevant literature. With the growth of distance education, online learning, and other emerging access-oriented open educational practices in traditional higher education, open universities should be uniquely situated to provide visible leadership in these domains. The open university website content analysis explores the extent to which this is the case.

Keywords: distance education, open universities, open educational practices, online learning

Introduction

Over the past five decades open universities worldwide have emerged, matured, and in some cases morphed from, or evolved into, new structures. Some are currently under threat of severe financial restraint or even closure, while others are thriving. According to a list maintained by Contact North (2018), there are, at the time of this writing, 70 open universities globally; this number will fluctuate somewhat depending on how the count is made and the types of institutions included. The institutions vary from those that were established as fully open universities, to others that were transformed from earlier types of institutions, such as educational television stations. They range in size from student numbers in the thousands to student numbers in the millions. Some are regionally or locally established; others have been set up by national governments with a mandate for access to education across an entire country. In all, open universities represent an extremely wide range of institutions, serving different purposes as well as existing in different historical, socio-economic, and political contexts.

A large majority of open universities are in Asia (Figure 1), with substantially lower numbers in Europe, Africa, North America, South America, and Oceania.

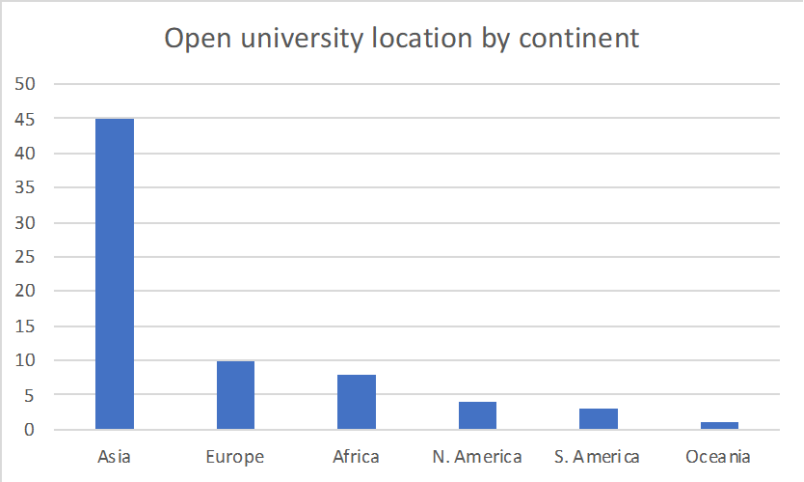

Figure 1. Open university location by continent.

Open universities are not just a phenomenon of the 1970s and 1980s; new open universities have continued to be established in subsequent years although at a sharply declining rate in the current decade (Figure 2).

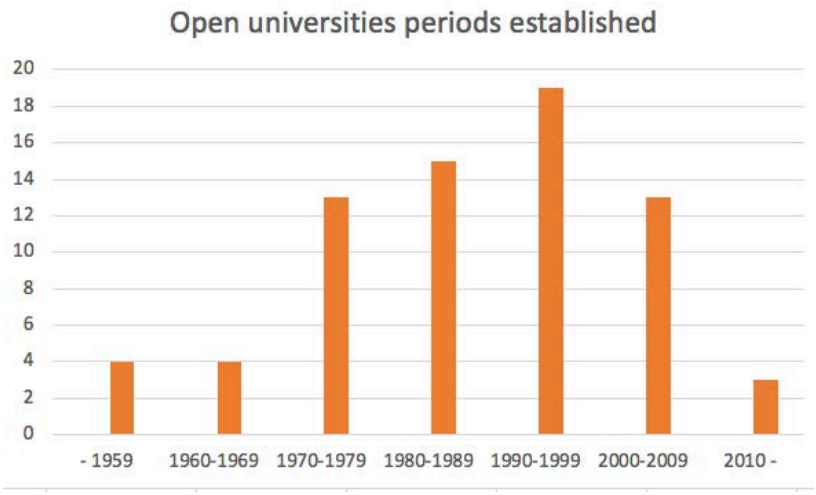

Figure 2. Open universities periods established.

With a conservative estimate of well over 20 million students worldwide—based on the partial enrolment statistics provided in the Contact North (2018) record—and with the existence of some open universities with student numbers in the millions, open universities will continue to make an impact into the foreseeable future.

From the 1960s onward, open universities used traditional broadcast media (television, radio) and correspondence or print materials to provide increased access to learning. Some of them continue in this tradition, while others combine broadcast media with print-based distance education or fully online learning, or use a variety of hybrid approaches, including blended programming with regional centres for face-to-face contact. Some have moved fully into the use of the internet and mobile technologies to deliver programming, depending largely on available infrastructures nationally or regionally, and accessible by targeted populations. Yet for many open universities, print-based learning materials remain a core or important ancillary technology for the delivery of education. Typically, the courses offered are developed by course teams with supporting faculty or tutors providing content expertise in development and tutorial support during delivery.

Open universities were established to fulfill specific governmental purposes, ranging from social and economic development to promotion of state ideology, with their purposes embedded in the larger economic and political setting (Tait, 2008). In their approach, open universities "embrace openness in terms of open admission, multiple exit points for studies, easy access to learning resources and flexible modes of learning" (Li, Yuen, & Wong, 2018, p. ix). Their novel designs aim to achieve economies of scale, with specialized course teams, media technicians, and learning technologists building courses for delivery to large numbers of learners, usually with the support of distance tutors. They are designed to meet learning needs at a scale that conventional universities have been unable to achieve, owing both to limitations of government funding and to restrictive organizational models (Daniel, Kanwar, & Uvalic-Trumbic, 2009). Today, discussions about the meaning and challenges of openness are rapidly expanding in the discourses of higher education and open distance learning, more often than not in relation to conventional higher

education. The challenge for the present research study is to sharpen the focus on open universities in general and provide a snapshot of their current role in open educational practices.

Openness in Higher Education

"Openness" in higher education is a somewhat amorphous and evolving concept (Peter & Diemann, 2013). Since the early days of open universities, mainly in the late 1960s and early 1970s, the definition of openness in education has expanded in multiple directions, captured in part more recently in the concepts of open educational resources (OER) and open educational practices. An early definition of OER makes reference to "teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge" (Atkins, Brown & Hammond, 2007, p. 4).

While a complete definition of open educational practices remains emergent in open education discourses, it includes a number of aspects that either extend or exist outside of the early methods of open universities in relation to their founding purposes. Weller, Jordan, DeVries, and Rolfe (2018) find that in research in the field, distance education emerges in the 1980s

> with a focus on the growing phenomenon of open and distance universities. Two notable shifts occur which link distance education to other subsequent themes in the development of openness. From the mid 1980s, the term "open learning" becomes more prominent, signalling a shift towards learner-centred pedagogy and removing barriers. Towards the end of the decade, technological advances such as computer-mediated communication and the nascent World Wide Web become increasingly important. Both lay some of the groundwork for the subsequent theme of "E-learning" and "online education." (p. 116)

Since the early 2000s, an additional theme that appears is open educational resources (OER) and open access publishing, which are seen as helping to reduce the cost barrier of education to students. More recently there has emerged the "omnibus" (Mishra, 2017, p. 376) term "open educational practices" which, by Mishra's definition, includes the following characteristics:

- *Open access*: inclusive and equal access to educational opportunities without barriers such as entry qualifications and ability to pay.
- *Open learning*: the ability to study and learn at anytime, anywhere, and at any pace.
- *Open scholarship:* comprises releasing educational resources under an open license that permits no-cost access, use, adaptation, and redistribution by others (p. 376).

Cronin (2017) further describes open educational practices as involving "collaborative practices that include the creation, use, and reuse of OER, as well as pedagogical practices employing participatory technologies

and social networks for interaction, peer-learning, knowledge creation, and empowerment of learners" (p. 4).

The practices described by Mishra support access to flexible education more broadly, and can be linked to open and distance education, and in particular online learning given the availability of online social networking tools in both open and more conventional universities. In addition, Cronin moves open educational practices into the pedagogical space using participatory technologies and collaborative networks. What is increasingly evident in higher education generally, then, is a broad landscape of potential overlapping emphases, priorities and practices related to openness that can cross over and interweave among open universities and conventional universities that are adopting various open educational practices, either in whole or as part of isolated initiatives or specialized departments such as continuing education, lifelong learning, or open learning/education.

How do open universities engage beyond distance education in more recent open educational practices? Various open educational practices may well be at play to one extent or scale or another in almost any university, whether an open institution or not. Further, other open educational practices are distributed among consortia or internationally among institutions in a manner that shares the development and support of OER and other practices.

Nevertheless, in addition to the work of conventional universities, there continues to be a need at the global level for higher education models that can specialize in the unique requirements of distance education, as well as, in some cases, work at a very large scale where the needs of massive populations remain unmet and the construction of new conventional universities is infeasible (Taylor, 2007; Daniel, Kanwar, & Uvalic-Trumbic, 2009). In some cases, such large-scale institutions are linked to national infrastructure projects to connect remote areas with Internet access as a means of extending opportunities for the delivery of education. For the purposes of this study, the focus of exploration is focused mainly on open educational practices that are generally engaged in, and broadly supported at, the institutional level as part of an open university's promoted identity and strategy. For this reason, open university websites were searched as sites for institutions to portray and promote their distinctiveness in relation to openness in education.

Methodology

The data-gathering method was content analysis (Stemler, 2001) of open university institutional websites, in a process that analyses and explores correlations between texts and possible themes or concepts (Hasim, Hashim, Ariff, Sapeciay, & Abdullah, 2018. Included institutional websites addresses were obtained from an open university registry maintained by Contact North (2018). Websites provide a window into institutions, and generally have a strong marketing and recruitment function and a mandate to highlight comparative advantages of institutions. Institutional websites are not all designed or to provide systematic comprehensive accounts of their institution; however, the analysis proceeds on the assumption that important features of open distance education will manifest in institutions' focus on recruitment and accessibility, and their desire to portray leading, high quality open educational practices.

A manual search (Hasim et al., 2018) was conducted of all listed open university websites for terms related to distance education and open educational practices. The search focused on key terms and concepts interpreted and semantically derived from Mishra's (2017), Li, Yuen, and Wong's (2018) and Weller, Jordan, DeVries, and Rolfe's (2018) accounts of distance education, open educational practices, and open universities. The terms selected for searches were "distance education" (including web-based, print packages, broadcast television and radio, mobile, and other remote e-learning methods such as CD ROMs, apps, and/or software programs); "open admission" (minimal/no mandatory entrance requirements); "flexible scheduling" (including non-fixed registration and semester terms); "recognition of prior learning" (including advanced entry or recognition of non-formal credit obtained elsewhere), "OER and open textbooks"; "open access publishing"; "research"; and "innovation." The searches included evidence of any related concepts that would imply the terms selected, wherever they might appear within the website. It is recognized that "distance education" and "online/e-learning" are overlapping terms; where necessary, some items were included in both. While outside the general scope of open educational practices, the presence of research is a factor in the quality of distance education and innovation was included mainly to find any relevant practices not directly captured by the preceding terms and related concepts. Examples of such innovation include interactive virtual classrooms, open science, virtual labs, and simulations.

The search included "any publicly available data including relevant PDF documents linked to the universities' websites" (Hasim et al., 2018, p. 3). Where language difficulties were encountered, the translation feature of the Chrome Web browser was used. Websites that were inaccessible for technical reasons (i.e., that would not load or function in any major western browsers) were excluded from the study resulting in a total of six such exclusions of the initial 70 websites visited. Based on the website searches and analysis, the numbers of open university websites that contain either the words or descriptions of the dimensions represented in the columns were tabulated and converted into a chart. Each dimension was counted only once for each website, regardless of the number of times it appeared.

Analysis

Reviewing open university websites is not a simple task. They vary greatly in quality, some loading very slowly or not at all and some designed for a low-bandwidth infrastructure, while others approach the glossy stock-photo-brochure style of many conventional universities. Some have sophisticated navigational structures while others seem outdated and poorly organized. In some cases, the websites are highly operational in nature and designed for practical use, with detailed course schedules and registration forms on the main page. Where strategic plans were present, they provided helpful information about institutional priorities. Results of the search are presented in Figure 3.

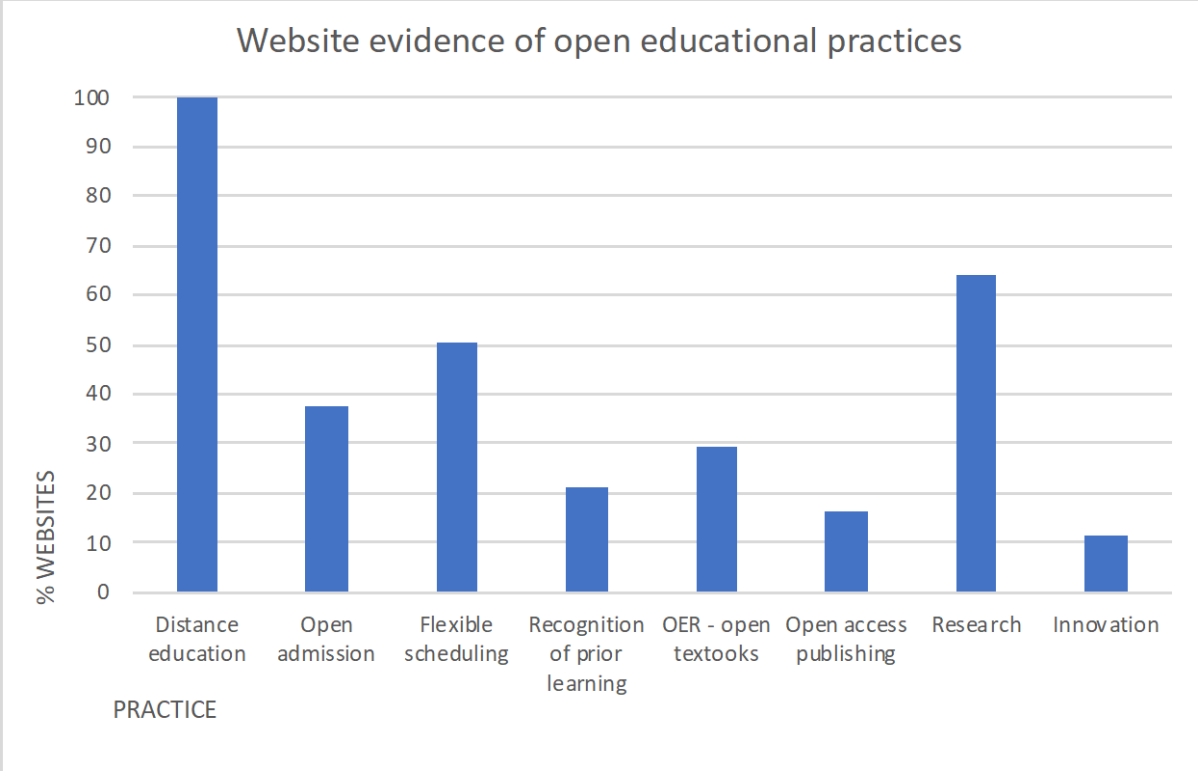

Figure 3. Website evidence of open educational practices.

Consistent with the early roots of open universities, distance education is indicated in all websites searched. Evidence of open access admission policies, such as those that have minimal or no mandatory entrance requirements or prerequisites, were found at 33% of institutions, primarily in developing countries. This is a difficult result to reconcile given the emphasis on access as an early core purpose of open universities. In a number of cases it was difficult to ascertain the nature of admission in general and this percentage should be looked at with a fair degree of caution. Recognition of prior learning is evident at 19% of institutions. Of the institutions reviewed, 45% indicate the use of flexible scheduling of programs on a time basis (Li & Wong, 2018) as opposed to fully scheduled semesters or course start and end points. Again, universities in developing countries generally featured more rigid course scheduling systems. Shifting toward more recent open educational practices appearing more broadly across higher education, there is evidence of such practices as OER adoption, including open textbooks was evident on 27% of institutional websites, with 16% of institutions making reference to open access publishing. There is no apparent regional pattern of use for either OER or open access publishing among open universities. References to innovation in educational practices were found on 9% of sites, including such examples as open science, MOOCs, competency-based assessments, and collaborative e-learning. A research focus is evident in slightly over half the institutions (56%), either in academic disciplines or in online and distance education. Research can be seen as an indicator of quality for both course content, and the mindset to review and update delivery methods and course content over time. Surprisingly, references to mobile learning are minimal, given the ubiquity of devices globally. A further item of interest is that there seem to be a number of institutions announcing expansions of central and/or distributed regional campuses.

Discussion

While one of the original purposes of open universities was to address educational needs not met by conventional universities (Tait, 2008; Lane, 2009), as early as 1987 Shale observed "it has proven difficult to define what an open university is (or is not). A university may be "open" in some aspects yet remain conventional in others. Conversely, conventional universities may be open in ways similar to the open universities while at the same time remaining firmly rooted in their tradition" (1987, pp. 9-10). To some extent, then, the lines blur between some aspects of open universities and conventional universities, particularly with regard to the presence of distance education and, more recently, in some open educational practices more generally. As noted by Orr, Weller, and Farrow (2018),

> expectations on higher education institutions to widen participation through reaching out to potential student groups while recognising their own personal circumstances puts new demands on the flexibility of time and place of studying. Whilst such considerations led to the establishment of specific national institutions in many countries. ...the expectation is now for all or at least most higher education providers to contribute to widening participation (p. 13).

This phenomenon is due in no small part to the longer-term trend of shifting student population demographics at many traditional universities from the "conventional" age range to older adult learners (Schuetze & Slowey, 2002; Hanover Research, 2015), and the potential economic advantages to institutions of recruiting from this latter demographic especially if enrolments in certain areas are declining among conventional student populations. These "non-traditional" students are described as "new groups of students who, for a complex range of social, economic and cultural reasons were traditionally excluded from, or under-represented in, higher education, have come to participate in higher education in increasing numbers" (Schuetze & Slowey, 2002, p. 312.). However, as has been learned over time, reaching out to "non-traditional" students, while potentially reaching more learners quantitatively, does not necessarily address other types of unequal access to higher education:

> For example, older people without traditional entry qualifications for higher education, people from working class backgrounds, those living in remote or rural areas, those from ethnic minority or immigrant groups appear to have done less well. They are all still largely under-represented in higher education because they still face greater barriers than the "traditional" students. Therefore, high participation rates do not automatically imply that the functions of higher education in social selection and social reproduction are obsolete, or issues of inequality or access are features of the past. The evidence from our study strongly suggests that the massification of higher education has not been sufficient to eliminate unequal rates of participation by different social groups (Schuetze & Slowey, 2002, pp. 313-314).

Among such inequalities in South Africa, for example, are persistent social injustices related to colonialism and apartheid, severe socio-economic disparities, ineffective school systems, skill shortages and population health issues (Subotzky & Prinsloo, 2011). Additional efforts need to be made by higher education institutions to address social inequities beyond simply increasing the numbers of "non-traditional" students through various techniques. As noted by Prinsloo and Subotzky (2011), "(m)ost developing-world research tends to use northern models uncritically as if they have universal validity" (n.p.).

The presence of these many needs and challenges returns us both to approaches beyond distance education to the fuller suite of open learning approaches and open educational practices such as flexible learning, OER, open admission, and assessment of prior learning, as well as a broader mandate of specific institutions to deploy the tools and methods of distance education and open educational practices. These approaches are intended specifically to improve access to education on a wider scope of dimensions and to promote more learner-empowering educational practices.

In spite of their relatively modest appearance on open university websites, OER and open access publishing are of growing interest in many conventional universities, largely to reduce costs to students, a strategy that would seemingly be a logical fit for open universities and their mandates to promote access to education. Organizations such as UNESCO (2018) and the Commonwealth of Learning (2018) promote the use of OER. It is also surprising that information about recognition of prior learning, potentially a strong distinctive for open universities given their access mandates and non-conventional structures, is not more prominent. Initiatives are in place at the national levels in South Korea, possibly the Philippines, Thailand, and Japan, as well as formal recognition of credit for OER and MOOCs at the national level in India among other possible areas (Harris & Wihak, 2018). While it would seem likely that there would be linkages between open universities and national or cross-jurisdictional programs of recognition of prior learning, this is not substantially visible in open university institutional websites.

Conclusion

This review of open university websites reinforces the earlier-noted observation by Shale (1987) concerning the blurring of lines between open and conventional universities, particularly with regard to distance education. While open universities have always been strongly characterized by the use of distance education modalities, conventional universities also continue to grow their distance education offerings, particularly with the expansion of online learning via learning management systems in place of the still-ubiquitous legacy of print packages in many open universities, a challenge due in no small part to available infrastructure, funding, and expertise. In terms of e-learning, there remains limited indications across the board of use of mobile and other advanced learning technologies. Recognition of prior learning is growing among conventional universities, particularly with developments in recognition of open courses and MOOCs around the world. Of the remaining areas that might characterize open universities and their mandates, flexible scheduling and open admission are present in a way that is not seen in most conventional universities outside of specialized departments. This is a potential distinctive that does not appear to be exhibited to the extent that might be expected in open universities. As these features are both challenging to implement in conventional universities given their structures and organizational models, they have substantial potential to distinguish open universities in overcoming important barriers to higher education.

As noted earlier, the present study has been limited to open university websites, which provide a variety of levels of detail and information about their institutions, their commitments and activities. Further follow-up research could reach beyond websites to include a more detailed analysis of institutions and their context over time, including their geographic, economic, social and political settings, policy frameworks, and

learner demographics. Specific lines of research may include changes in relation to specific open educational practices and such phenomena as the MOOCs and microcredentials.

An evolving mix of universities and other higher education institutions worldwide is becoming increasingly involved in online education and open educational practices. The snapshot generated from this study would indicate that while open universities continue to use distance education in various forms, their participation in a variety of open educational practices appropriate to their contexts remains unclear.

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Open Universities: Innovative Past, Challenging Present, and Prospective Future

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Abstract

This article examines the innovative past of the large-scale, single-mode open universities that follow the model of the UK Open University (UKOU), analyzes the main challenges which they are currently facing in the digital era, and concludes with highlighting leading prospects for their future operation.

The establishment of the UKOU in 1969 marked a new era in distance higher education. It gave distance education a new legitimacy and opened up new prospects for populations that for a variety of reasons were unable to attend a campus-based university. Many of the new open universities were heralded as a conspicuous development in higher education, with innovative features such as: open access, reaching out to part-time adult students, providing academic faculty the opportunity to work in teams to prepare study materials, modular credit accumulation, teaching huge numbers of students, and harnessing innovative technologies into their teaching/learning processes.

In the last three decades, many of these innovative characteristics pioneered by open universities have been adopted by campus universities. This has eroded the unique status of open universities in many national jurisdictions. Furthermore, the emergence of digital technologies has challenged the underlying premises of the industrial model of many open universities, as well as their logistic operation. Present challenges facing open universities emerge from: blurred boundaries between distance and campus universities; the changing of initial target populations; the need to restructure the technological and logistic infrastructure of open universities; the changing roles of the academic faculty; and the growing competition for both students and funds. In order to find success and keep being relevant in the future, open universities should take into consideration: future target populations; the use of MOOCs and OER; support systems for both students and professors; collaboration with other higher education institutions; collaboration with the corporate and work worlds; and enhancing the academic status of open universities.

Keywords: distance education, open universities, distance teaching universities, e-learning, digital technologies

Introduction

The establishment of the UK Open University (UKOU) in 1969 was considered to be a breakthrough in higher education. Its impact on the development of single-mode distance teaching universities worldwide has been extraordinary. While struggling for respect at home, the UKOU has served as a model of imitation and guidance abroad. It has improved the image of distance education at the higher education level enormously. Many have heralded new open universities as the most conspicuous development in higher education in recent decades and as a new academic tradition (Shaw & Taylor, 1984), as a radical challenge to the concept of a university (Keegan & Rumble, 1982), as the new temples of learning (Reddy, 1988), and as a new species of university (Perry, 1977).

The terms *open universities* or *distance teaching universities* are, of course, generic terms and as such cover many variations and differences in purpose, practice, and paths of development in different countries. There are currently around 60 single-mode distance teaching universities around the world (Tait, 2018). Most of these single-mode distance teaching universities have not adopted an open admission policy, even though they are entitled as an *open university*, but instead portray openness in many other dimensions (Guri-Rosenblit, 1999, 2014). In this article, the terms *open universities* and *distance teaching universities* (DTUs) are used interchangeably.

Disbanding the campus and reaching out to students to allow them to study wherever and whenever they prefer is the feature which has distinguished open/distance teaching universities from mainline, residential campuses for nearly 150 years. UK and Canada have a long history of correspondence education dating back to the 19th century. Thus, the UKOU was not innovative in offering distance higher education. In 1858, London University opened its gates to all commonwealth candidates in several academic programs. But the UKOU has been innovative in many other ways, such as by: adopting an open access policy, reaching out to part-time adult students, enhancing teamwork of academic faculty in preparing high quality study materials, introducing the modular credit accumulation in the English higher education system, teaching huge numbers of students, and harnessing innovative technologies into its teaching/learning processes. In many other countries, like Spain, Germany, Israel, China, and Japan, the concept and practice of distance teaching at a university level was novel and revolutionary until the early 1970s, and offering higher education through distance teaching methods has constituted the main innovative characteristic of some of the new DTUs (Guri-Rosenblit, 1999).

During the last three decades, many of these innovative characteristics pioneered by open universities have been adopted by campus universities. The unique status of open universities as leading breakthrough innovations in many national jurisdictions has been eroded. Furthermore, the emergence of digital technologies has challenged the underlying premises of the industrial model and the logistic operation of large-scale open universities. Drastic governmental budget cuts in many countries have put the operation of several DTUs in a most vulnerable position. Open universities are currently challenged by: blurring boundaries between distance and campus universities; change of their initial target populations; need to restructure their technological and logistic infrastructure; changing roles of their academic faculty in the digital era; and growing competition between them and campus-based universities for both students and funds.

The article concludes by highlighting the leading future prospects for open universities in relation to: future target populations; the use of MOOCs and OER; support systems for both students and

professors; collaboration with other higher education institutions; collaboration with the corporate and work worlds; and enhancing the academic status of open universities.

Innovative Past

Open universities, and the UKOU in particular, have introduced many innovative features into the academic higher education systems within which they operate. Clearly, academic cultures vary greatly. In some countries, the very introduction of providing higher education through distance education methods has constituted an enormous innovation, like in Germany, Spain, Israel, China, and Japan, whereas in other countries many breakthrough innovations were pioneered by the single-mode DTUs.

The UKOU was the most daring and innovative university in the context of the UK higher education system. As aforementioned, it was not innovative in offering distance education at the university level. However, the UKOU challenged long-standing assumptions in the UK higher education system and revised many common traditions by: demanding no entry qualifications in a strongly elitist higher education system; opening the university gates to part-time adults who were commonly ignored by other universities; challenging the ethos of academic freedom by inventing the course team approach for developing courses; its establishment from the outset as a mega university contrary to the British tradition of small universities; being the first university in the English higher education to adopt a modular system; and by basing its operation on a partnership with the BBC in order to mobilize mass media for the benefit of higher education. Many open universities worldwide followed its suit, adopting some of UKOU's innovative features.

Open Access to Higher Education

Broadening access to higher education is a concern of all open universities. Without any doubt, the opening of access to a university degree, without the setting of any entry requirements by some open universities such as the UKOU, Athabasca University in Canada, and The Open University of Israel, conflicted drastically with the traditional meritocratic concept of selective admission to university studies. In the context of the elite higher education systems of the UK and Israel, this was particularly revolutionary.

DTUs including Universidad Nacional de Educación a Distancia that was founded in 1972 as the only national university in Spain, and the FernUniveristät that was established in 1973 in the land of North Rhine Westphalia in Germany— have not adopted an open admission policy. This rejection of the open admission policy arose from the concern that such a policy would alienate these DTUs from the mainstream universities and put them in an inferior position. However, these DTUs were innovative in terms of offering higher education through distance teaching methods, as well as by providing flexibility in time, place, and pace of study (Guri-Rosenblit, 1999; Keegan & Rumble, 1982; Peters, 1994).

Part-Time Adult Students

Nowadays, part-time adult students constitute an important segment of the student body in higher education worldwide. Part-time provision is perceived as a pragmatic means for expanding access to higher education, by enabling students to combine study with work, domestic and social

responsibilities, health restrictions, army service, etc.; however, this was not the case in many countries in the early 1970s.

The UKOU has been clearly committed to part-time adult students from its initial establishment. Walter Perry, the first Vice-Chancellor of the UKOU argued that providing higher education to part-timers was the most important goal of the UKOU. The overriding view in the UK academic community in the 1960s was that part-time higher education was not part of their responsibility. It was this view that perpetuated the gap in higher education provision for part-time students in the UK (Perry, 1977).

In many other countries, such as Spain, Germany, and Israel, at the time when open universities were established—part-time higher education was a common practice at campus universities as well. Catering for part-time, employed adults, was not a break from tradition in these countries (Guri-Rosenblit, 1999).

Teamwork

Some open universities presented a threat to the prevalent ethos of academic freedom by defining stringent quality assurance procedures to ensure the high quality of the instructional materials, and by implementing a teamwork approach in teaching. The UKOU pioneered the model of teamwork in preparing high quality self-study courses. For the design of each course, a team made up of academics, educational technologists, television and radio professionals, editors, tutors, and others as needed, was formed. Within this team, the writing of the academics was evaluated both by other academics in the team or by academics from other universities. Scaled-down versions of UKOU's teamwork model were later adopted by many open universities. Perry (1977) stated that during the recruitment process of the academic staff to the UKOU, it was made abundantly clear that the conventional academic freedom in teaching could not and would not be available to the academic staff of the UKOU. Perry reckoned that academics took this limitation on their academic freedom in different ways. Some found it relatively straightforward, while others had difficulties in coming to terms with this policy, and thus refrained from joining the academic faculty at the UKOU (Perry, 1977). In contrast, during the development of DTUs in Germany and Spain, quality assurance procedures and teamwork were not obligatory, and thus were not forced on the academic staff of DTUs (Guri-Rosenblit, 1999). Academics at the Spanish and German DTUs were even permitted to refuse the employment of an editor to edit and revise their writings (Guri-Rosenblit, 1999; Peters, 1983, 1994).

Today, teamwork is a common practice in preparing Massive Open Online Courses (MOOCs), Open Educational Resources (OER) and online courses worldwide by academics from both campus-based and distance teaching universities (Bonk, Lee, Reeves, & Reynolds, 2015; De Corte, Engwall, & Teichler, 2016; Lane, 2017; Pappano, 2012). Unquestionably, the UKOU introduced the use of teamwork as means to prepare high-quality teaching materials to the academic world.

Reaching Out to Large Numbers of Students

Open universities, by their very nature, were established to become large-scale universities. Daniel (1996) defined DTUs that teach over 100,000 students as *mega-universities.* He argued that some of the key strengths and weaknesses of mega-universities are due to their absolute size. The financial base associated with their size allows them to make substantial financial investments in new technologies and enables them to invest large amounts of money in developing high quality study

materials. However, to teach huge numbers of heterogeneous student populations entails both logistic and didactic difficulties.

Today, some DTUs have reached an enormous size. Indira Gandhi University is considered to be the largest university in the world with over 4 million students. In 2015, The Open University of China enrolled over 2.7 million students, and in 2017, Anadolu University in Turkey enrolled around 2.9 million students. Clearly, the scale and the logistics of mega-universities creates an inertia not found in smaller institutions, and distinguishes them from small higher education institutions.

The Modular System

The modular system in higher education is prevalent today in all higher education systems. Most universities divide their degrees into courses and operate some variant of the credit accumulation system. Considerable differences exist between credit sizes across various higher education systems. The requirement for an undergraduate degree might range from six large courses to over 30 courses. The modular credit system originated at Edinburgh University in Scotland in the early 18th century and reached full flower in the United States (Rothblatt, 1991). Thomas Jefferson had a Scottish tutor, and Jefferson introduced the credit system when founding the University of Virginia in the mid 1820s (Rothblatt, 1991). The modular system was eventually adopted by all higher education systems worldwide.

Interestingly, though the modular idea was initiated in Scotland, it was not quickly adopted by the English higher education system. The UKOU was the first English university to adopt a modular system. The Scottish influence on the UKOU was undeniable. Both Jennie Lee, the leading champion of the university, and Walter Perry, its first Vice-Chancellor, were Scottish. When developing the credit system for the UKOU, Lee and Perry agreed that the Scottish system was most useful for adaptation. For an ordinary Bachelor or Arts (BA) degree at Scottish universities, students were required to take a minimum of seven courses. At the UKOU, it was decided that six courses would be required for an ordinary BA and eight courses for an honors degree (Perry, 1977). The UKOU was a harbinger which had envisaged the need to change the traditional concept of a unified and coherent curriculum structured and monitored closely by a tutor. Today, most UK universities employ a modular system aligned with the Bologna European Credit Transfer System.

Harnessing Advanced Technologies

Open universities owe a great part of their subsequent fortunes to their early and rapid marriage with communication technology (Daniel, 1996; Guri-Rosenblit, 1999) The open universities that were established in the 1970s and 1980s were regarded by many as *the universities of the air* (Guri-Rosenblit, 2010). Television in those days was the queen of the media, and the new open universities were expected to harness the technology of mass communication for the purposes of higher education (Guri-Rosenblit, 1999; Conole, 2014).

The initial idea of creating a new, single-mode distance teaching university in the UK reposed on the idea of mobilizing mass communication media for the transmission of lectures through the UK. From this, the UKOU created a partnership with BBC, though its main teaching mode relied on printed self-study materials. Several DTUs were based entirely on teaching through mass media. Since its establishment in 1979, China Central Radio and TV University (now called the Open University of China) has used TV and Radio to transmit lectures to students. The University of the Air in Japan

(renamed in 2007 as the Open University of Japan) was established in 1985, and its instructional media included TV, radio, and satellite transmissions. The Korean Open University was established in 1972 as a branch of the Seoul National University, and in 1982 became the Korean National University. It transmitted lectures through a domestic cable TV until the emergence of the digital technologies (Guri-Rosenblit, 2010). However, mass communication media are not the leading technologies nowadays (Bates, 2015; Bates & Sangra, 2011; Branch, Bartholomew, & Nygaard, 2015; Contact North, 2018; Guri-Rosenblit, 2010, 2018). Unquestionably, the new digital technologies have a deeper and stronger impact on all higher education institutions as compared to mass media technologies. The idea of harnessing advanced technologies for the benefit of higher education is widely accepted today.

Challenging Present

The success of open universities has prompted campus-based universities in the last decades to adopt many of their innovative practices. It seems that once innovative efforts gain success, they become quite attractive to those who earlier judged such ventures to be mere folly. Open universities have thus evolved from being viewed as a daring experiment in higher education to a strategic provision of higher education. The emergence of the digital technologies has prompted many of the campus universities to reach out to students beyond their campuses by offering fully distance or blended programs. New technologies also gave birth to many new distance education providers. Some are public institutions, whereas many are for-profit private entities.

Today, DTUs are facing many challenges. In the relevant literature, a growing number of policy papers and publications have been concerned with the sustainability of the open university model (Commonwealth of Learning, 2017; Garrett, 2016; Guri-Rosenblit; 2014; Tait, 2018). The following section outlines the major challenges currently faced by open universities.

Blurred Boundaries Between Distance and Campus Universities

For nearly 150 years, the distinction between mainstream campus and distance education was clear. By its very nature distance teaching at higher education level was different from teaching at mainstream universities. Instead of assembling students from dispersed destinations onto one campus, distance teaching institutions have reached out to students wherever they live or wish to study. However, the function of providing education to students wherever they live or wish to study is no longer unique to distance teaching universities. Today, new digital technologies enable campus universities to reach out to students outside of their residential campus and to offer online courses to both off-campus and on-campus students. These blurred boundaries between distance and campus-based institutions have led to an identity crisis for some of the single-mode DTUs, challenging their raison d'être and eroding their unique status in their national jurisdictions (Commonwealth of Learning, 2017; Guri-Rosenblit, 2014; Tait, 2018).

Change of Initial Target Populations

Participation rates in higher education in many countries were quite low when open universities were established in the 1970s and the 1980s – between 8% to 30% (Guri-Rosenblit, 1999). In addition, provision of higher education to part-time students was very limited in some countries. Thus, there was a high demand in all DTUs for part-time study at the undergraduate level. Furthermore, some

professions have started to upgrade their position to an academic status since the 1970s. For example, in the 1970s and 1980s, teachers constituted a large student cohort in the UKOU, the Open University of Israel, and Terbuka University in Indonesia (Guri-Rosenblit, 1999; Tait, 2018).

Today, participation rates in higher education are very high in most European countries and in North America. Participation rates in higher education fluctuate between 50% to 85% of relevant age cohorts (Tait, 2018). As a result, there has been noticeable decline in enrollment at the undergraduate level in many DTUs in the last decades. Governmental budget cuts have also affected the demand for part-time study at the bachelor level in some open universities. UKOU, for instance, lost as much as third of its students in the last decade as a result of new regulations concerning government funding of part-time students (Garrett, 2016; Tait, 2018).

Open universities in Europe, North America, as well as in some parts of Asia, have thus had to define alternative target populations to ensure their sustainability in their national jurisdictions. Potential students for open universities might be: those looking for professional upgrade, short cycle diplomas, or postgraduate degrees; younger students (even at the high school level); or transnational students.

Need to Restructure the Technological and Logistic Infrastructure

The digital technologies have challenged the economic and logistic infrastructure of large-scale DTUs, based on the industrial model of the UKOU (Guri-Rosenblit, 1999; Peters, 1983, 1994; Rumble, 2014). The search for less expensive ways of providing higher education to large numbers of students was one of the main considerations behind the establishment of the large DTUs by national governments in the 1970s and 1980s. The industrial model of distance education succeeded in creating an admirable equilibrium between being able to absorb unlimited numbers of students while still monitoring tightly the quality of the study materials and the study process at a lower cost as compared to conventional campus universities.

One positive impact of the new technologies in the context of DTUs, is that they enable teachers to update study materials on an ongoing basis, as well as facilitate interaction between students and teachers, and among students. In other words, the new technologies alleviate two of the major disadvantages of traditional distance teaching. However, at the same time, these new technologies also highlight the importance of interactions with expert teachers in the actual study process (Bates & Sangra, 2011; Conole, 2014; Guri-Rosenblit, 2010; Harasim, 2012). Most large-scale DTUs are based on relatively small academic staffs, and cannot afford the hiring of additional academics in order to facilitate student-professor interaction in most of their large courses, studied frequently by thousands of students. The reality is that most large scale DTUs lack the appropriate infrastructure and human capital to use the new technologies broadly and efficiently (Guri-Rosenblit, 2010, 2014; Rumble, 2014). To use the new technologies for online learning and teaching demands a major overhaul of the whole operation of the veteran DTUs, and a huge investment in setting up a totally new infrastructure for developing and delivering courses.

Changing Roles of Academic Faculty

The roles of academic faculty, both in open universities and in campus-based universities, have been changing dramatically in the last two decades (Guri-Rosenblit, 2018). The incorporation of new technologies in DTUs force academic staff to assume new responsibilities and to develop a whole range of new skills. The industrial teaching model pioneered by the UKOU is based on the notion of

distributing teaching responsibilities between the senior academic staff, course coordinators, and tutors. In some open universities, like the Open University of Israel, the senior academic staff are mainly responsible for developing study materials and are not involved directly in the teaching process. However, the use of the distributed teaching responsibility model is less possible in the digital age, in which students expect to interact directly with their teachers.

Universidad Oberta de Catalunya (UOC), which was established in 1995 as an online university, has relied from its very outset on a totally different teaching model for distance delivery. It currently employs around 300 senior academic faculty and more than 2,000 professors from campus-based universities in Spain and Latin America as adjunct professors on a part-time basis. The University of Maryland University College also employs full-time academic faculty and adjunct faculty for online teaching, and has never adopted the distributed teaching responsibility model.

Academic faculty in many DTUs feel reluctant to support the move towards the development of digital courses and to engage actively in online teaching because it entails a dramatic change in their roles and obligations (Guri-Rosenblit, 2018). Academic faculty need to learn how to use data provided by Learning Analytics, monitor closely the study process of students, and to be able to use MOOCs, open educational resources, and other digital resources in developing courses and in the teaching process. They also need to learn how to engage in e-chats and other online activities. Definitely, the use of the new technologies entails acutely different requirements of the teachers as compared to their current roles as academics in the industrial model of distance teaching delivery.

Growing Competition

Most large distance teaching universities were established as a product of governmental planning assigned to fulfill national missions (Guri-Rosenblit, 1999). They were born in a period when governments funneled large amounts of public funds into higher education for the building of new institutions and the expanding of existing ones. This situation has changed dramatically in the last decades. The enormous expansion of higher education led many governments to drastic budget cuts in supporting higher education institutions. Universities are encouraged today to become entrepreneurial in nature and mobilize funds by raising tuition fees, as well as by relying on the corporate world, philanthropic donors, and business-like ventures.

In addition, open universities today face fierce competition for potential students from campus-based universities that offer fully online programs, as well as from new distance education providers. Very few governments protect the unique status of open universities as sole providers of distance education (Garrett, 2016; Tait, 2018). In China, for instance, the Radio and TV Universities Network that was established in 1979 was the sole distance education provider in China for twenty years. From 1999 onwards, 68 online colleges in campus-based universities were authorized by the Chinese Ministry of Education to offer online/distance degrees and professional diplomas, focusing mainly on continuing education and professional upgrade (Li, 2012). Since 2014, the Chinese Central Government abolished the regulation that new online/distance education programs need to be authorized by the government and enabled any Chinese university to offer online/distance degrees and diplomas (J. Xiao, personal communication, November 10, 2015).

Major strategies that open universities can adopt to respond to the growing competition for students and funds include: to reach out to new target populations, to collaborate with other competing

institutions in an attempt to reduce the competitive risk, to increase collaboration with the work and corporate worlds by designing tailor made programs, and to strengthen their relative advantages and demonstrate excellence in specific areas.

Future Prospects

Despite the immense challenges that open universities are currently facing, they still hold a huge potential for playing an important role in both national and international contexts. It is of tremendous importance that their leaders invest efforts to redefine their future target populations, consider how to use MOOCs and OER efficiently in order to reduce costs and secure high quality materials, provide efficient support systems for both students and professors, collaborate with other higher education institutions and with the corporate and work worlds, and enhance the academic status of open universities by scoring high on excellence in teaching and promoting high level research in designated areas.

Future Target Populations

It is important to distinguish between potential student clienteles of DTUs in different parts of the world. Significant growth in number of students will take place in the next decades, primarily in the countries of Asia, Africa, and Latin America (Tait, 2018). Open universities in Europe and North America will have to look for potential new target populations.

As aforementioned, many DTUs have suffered in the last decade from an enrollment decline at the undergraduate level due to fierce competition from traditional campus universities and new providers of online education. Governmental budget cuts to DTUs have further contributed to the decline of part-time demand in some countries. Leaders of open universities should define new potential target groups. One such group may be students from highly disadvantaged backgrounds that cannot be admitted at other universities or higher education institutions. Garrett (2016) believes that the core target group for open universities in the future is composed of students that come from very low social and educational backgrounds. He argues that DTUs should provide adequate support mechanisms for such students (Garrett, 2016).

It is also advisable for open universities to reach out to students from strong backgrounds – such as students who already possess a bachelor's degree or even a postgraduate degree, who are looking for short cycle programs mainly for professional upgrade. Bates and Sangra (2011) claim that lifelong learning has become critical for the economic development of knowledge-based economies. From this, Bates and Sangra (2011) predict that the market for lifelong learning for professional update will grow immensely in the future, and that this market will be at least as great as the market for students leaving high school for university and college studies. Students opting for diploma studies and continuing professional education will enroll either as individuals or more likely as members of organized groups, on the basis of contracts signed between the universities with firms and enterprises in the corporate world. DTUs are well equipped for providing a rich spectrum of opportunities for professional upgrade.

Another potential student population for some open universities might be young, high school students who are excelling in their studies. At the Open University of Israel (OUI) there is a growing number of

high school students, excelling mainly in mathematics, sciences, and computer science, that study towards an academic degree at the open university concurrently with studying at high school. Some even succeed in completing a bachelor's degree concurrently with their matriculation exams. Such young high-level students need a special nurturing environment. Another growing group of students at the OUI are soldiers in the process of completing their three-year compulsory service. Offering service members an array of disciplines to choose from, OUI enables service members to complete their first year of a bachelor's degree. The completion of all requirements of a first academic year at the OUI allows soldiers to then enroll at other universities for their second year of academic study. Agreements between the OUI and other Israeli universities set a priori conditions for transferring to a second year of study after completing first year courses and passing first year exams with high grades.

Transnational students constitute an additional potential target population for open universities. The International Telematic University (UNINETTUNO) in Italy that was established in 2005 develops courses in four languages: Italian, Arabic, English, and French, aimed mainly for students in the Mediterranean region (The International Telematic University, 2018). Open universities that teach in English or Spanish are in a favorable position to reach out to transnational students (Guri-Rosenblit, 2010, 2014).

Use of MOOCs and OER

Massive Open Online Courses (MOOCs) and the open source movement producing Open Education Resources (OER) hold a special promise for open universities. MOOCs are a recent development in distance education. They were first introduced in 2008 and emerged as a popular mode of learning in 2012 (De Corte et al., 2016; Lane, 2017; Pappano, 2012). A MOOC is an online course aimed at unlimited participation and open access via the Web. In addition to traditional course materials such as filmed lectures, readings, and problem sets, many MOOCs provide interactive user forums to support community interactions among students, professors, and teaching assistants.

MOOCs were initiated by elite American universities, and now many universities around the world are following suit. In Europe, the MOOCs movement is being led by the UKOU and by the European Association of Distance Teaching Universities (EADTU). In 2012, the UKOU initiated the FutureLearn project – collaborating with 143 partners (including non-university partners) in preparing MOOCs and nano-programs aimed mainly for postgraduate students and for professional upgrade (FutureLearn, 2018). In 2014, EADTU initiated the HOME project, which stands for: *Higher Education Online: MOOCs the European Way*. The aim of HOME is to develop and strengthen an open network for European cooperation on open education in general, and MOOCs in particular (EADTU, 2018). However, currently, a minority of open universities produce MOOCs or use them as an integral part of their teaching. MOOCs and OER have the potential to reduce costs of developing study materials, as well as to enable the academic faculty at open universities to devote more time to engage in actual teaching and assist in assuring high quality study materials.

Support Systems

Successful online learning demands much more of students and teachers than understanding how to navigate a learning management system, download files, and design PowerPoint presentations. Though most students are accustomed today to using technology in their personal and social lives, they do not necessarily know how to use technology efficiently in their studies.

Students need digitally confident teachers. However, most academic faculty are not well equipped to guide students in developing digital competencies. Many studies in the relevant literature dealing with the implementation of digital technologies in academia specify a long list of roles which teachers are expected to undertake in online teaching, such as: monitoring students' learning by providing ongoing feedback; identifying and resolving instructional, interpersonal, and technical problems; and being responsible for creating a learning community. Such roles are often very different from teachers' typical teaching responsibilities. For DTU teachers, this change of roles entails work overload with no appropriate compensation, which partially explains the resistance of academic faculty at many universities, including open universities, to transfer to online teaching (Guri-Rosenblit, 2018).

Most universities today, including DTUs, are not employing widespread strategies to address the digital literacy needs of their academic faculty and students. To enable professors to make the most of new technologies and the various teaching tools these technologies offer, necessitates a conceptual redefinition of the academic faculty's roles, and well-designed training and ongoing support systems for both students and teachers. As technologies continue developing and new uses proliferate, the meaning of digital literacy will continue to evolve. Thus, the support systems for both students and teachers should operate on an ongoing basis, and continually adjust to new technological tools and practices.

Collaboration With Other Higher Education Institutions

Leaders of DTUs should identify and define clearly both their potential competitors and collaborating parties in academia within national boundaries and beyond them. Partnerships, if they are successful, create greater strengths. The basic underlying idea behind cooperation is that the *whole* may be greater than the *sum of its parts*. Failure to collaborate often results in an unnecessary duplication of efforts and in ineffective investments of scarce resources.

Successful inter-institutional collaborations of DTUs have the potential to attract new student clienteles, reduce costs for course development, enhance flexibility, ensure high quality mechanisms, provide richer and better programs, and strengthen the financial basis of distance teaching institutions. Finding appropriate partners and maintaining a fruitful collaboration constitute two of the most challenging tasks that are crucial for the future operation of DTUs.

The FutureLearn initiative of the UKOU described earlier, constitutes such an effort of joining forces between many universities, both campus-based and distance teaching universities (in addition to non-university partners), to produce high quality programs that are aimed to serve a huge variety of students. In 2015, The Open University of Israel (OUI) established an Online Academia subsidiary company whose main target is to produce high level online courses in collaboration with academic faculty from the 61 other universities and colleges in Israel. It also created many collaborative agreements with universities to ensure a flexible transfer of its students who study introductory courses at the OUI to fields of study that do not exist at the OUI. Such transfer channels mainly serve high school students and soldiers in compulsory service.

Collaboration With the Corporate and Work Worlds

DTUs are by their very nature inclined to create a closer interface with labor markets and the corporate world. From their outset, many DTUs have appealed to professional groups, such as teachers, nurses, engineers, technicians, and public employees, and have designed a variety of

programs geared towards professional upgrade. Throughout the years, many DTUs have redefined their initial priorities in order to meet changes in labor markets and societal demands. Today, many open universities offer continuing education programs tailored to the special needs of particular professions, and to the unique requirements of special firms.

In today's workforce, employers are increasingly interested in what potential employees can do rather than what or where they studied. Many professional bodies are moving toward competency-based and mastery models for admission to the profession. These include project management, nurse and medical education, some engineering professions, and many more (Contact North, 2018). Over the coming decades we can expect more professional bodies and workplaces to adopt a competency-mastery approach to professional certification. Nano-degrees and mini-masters, which might easily be offered by open universities, may greatly accommodate this trend. Open universities are thus in a strong place to offer appropriate programs for the benefit of professional upgrade (Contact North, 2018; Ubachs, Konings, & Brown, 2017).

Enhancing the Academic Status of Open Universities

It is of tremendous importance for open universities to enhance their academic status both within national boundaries and across international networks. Excelling in teaching has been a clear mission for open universities from their initial establishment. It is of outmost importance that they continue to be leaders in implementing innovations into higher education teaching. Many open universities have been ranked highly in student's national surveys in different countries. The OUI, for instance, was ranked from 2014 to 2019 as the top university in the national student's association satisfaction survey, in the parameters related to excellence in teaching and efficient incorporation of the digital technologies into the learning/teaching processes (Open University of Israel, 2019). DTUs should continue putting an emphasis on enhancing their excellence in teaching.

Academic status is manifested today in an array of league tables. International university rankings have become a familiar character of the higher education scene in the last two decades (Federkeil, 2011; Millot, 2014). International league tables started in 2003, and were geared at the beginning for identifying leading research universities. An additional underlying premise behind the ranking tables relates to the growing importance of providing reliable information to the clients and consumers of higher education. The ranking tables assist in providing relevant information to student clienteles comparing various potential higher education institutions before deciding where to enrol. There are today over 50 ranking tables that position higher education institutions worldwide according to various indicators (Federkeil, 2011).

The two most important league tables for highlighting leading research universities are the Jiao Tong Shanghai World University Ranking (Shanghai Ranking, 2018) and the Times Higher Education Supplement Ranking (Center of World University Ranking, 2018). Open universities, by their very nature, have not been designed to be leading research universities. But they might lead high quality research in a few relevant areas of their operation, such as: the impact of digital technologies in higher education, cognitive science focusing on adult learning, learning analytics, etcetera. UKOU, for instance, was positioned in the group of 301-400 leading research universities in the Shanghai Rankings from 2003-2010. From 2011 to 2014, UKOU dropped to the 401-500 group. From 2015 onwards it disappeared from the Shanghai Ranking (Shanghai Ranking, 2018). However, the UKOU still ranks high in its national boundaries. It was ranked 36th among 132 universities in the UK by the

Times of Higher Education Ranking in 2018 and 498th in the world in a list of 1,000 leading universities in the world (Center of World University Ranking, 2018).

The OUI allocated in the last decade a generous budget to promote research centers in three main areas – digital technologies, social media, and the three Abrahamic religions. It is likely that investing in promoting high level research in a few designated areas relevant to their operation, will greatly assist DTUs in enhancing their academic status both in national and international settings.

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Open Universities: Old Concepts and Contemporary Challenges

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Abstract

We begin by summarising Prasad's (2018) work on the disconnect between the social purposes of open universities and their achievement. Next, we will revisit the concept of the iron triangle from the 1990s, which explores the three topics access, cost, and quality. How does it apply to distance education conducted with today's technologies? A distinction made in the 1970s between independent and interactive learning activities helps us pursue this question further. A discussion among open university executive heads from around the world in 2017 sets the stage for the final section, which reflects on the current challenges facing open universities. How should they address the competition from the rapidly expanding online offerings of campus institutions? We review economic models, the use of technology, governance and management arrangements, and teaching. The successful systems conceived by the UK Open University in the late 1960s stimulated the creation of many other open universities. How should they be updated today?

Keywords: open universities, distance education, open learning, higher education, access, quality, cost, governance, management, social purpose, independent study, interactive learning

Introduction

Open universities were the most significant innovation in higher education of the late 20th century. The first chancellor of the UK Open University (UKOU), Lord Geoffrey Crowther, captured the public imagination at the UKOU's inaugural ceremony when he proclaimed its purpose of being "open as to people, open as to places, open as to methods and open as to ideas" (Crowther, 1969, pp. 1-2).

By operating at scale with low costs, raising the standard of learning materials, and introducing newer communications technologies, open and distance learning promised to transform higher education generally. But this wider mutation occurred only slowly. Most campus universities did not take distance learning seriously until the second decade of the 21st century, when the Internet became pervasive and some Canadian and US universities offered massive open online courses (MOOCs).

By then there were some 50 open universities (OUs). The 50+ Commonwealth countries alone count 27 of them (Mishra, 2017). The success of each OU naturally reflects the economy and politics of its home jurisdiction, as well as the general evolution of higher education. Some OUs have forged ahead, others have struggled to get going, while yet others now face difficulties after decades of achievement (see e.g., The Guardian, 2018).

This analysis of the future prospects of OUs is couched in general terms since, with few exceptions, citing individual institutions is not appropriate. Institutional status can change quickly.

The article draws on two concepts found useful during the author's many years as a scholar-practitioner in open and distance learning (ODL) from 1971 onwards. It also recalls with admiration the teaching and learning system developed for the UKOU by Walter Perry and colleagues in the 1960s. These caught the imagination of policy-makers worldwide and inspired many countries to adopt and adapt them.

Before applying older concepts to today's OUs, we summarise Prasad's distinction between the dharma (social purposes) and the karma (actual practice) of distance learning in the case of India (Prasad, 2018, p. 6). A later section of the paper recalls the conclusions of a roundtable of OU vice-chancellors held in the margins of the ICDE World Conference on Online Learning in October 2017 (Daniel & Tait, 2017). Our concluding remarks reflect on the challenges facing OUs today. How should they evolve now that online learning offerings from campus universities are exploding?

Dharma and Karma of Distance Learning

In his recent book on open and distance learning (ODL) in higher education in India, Prasad (2018, p. 6) used the Sanskrit words dharma and karma to distinguish between the "principles that guide us to do the right things" (dharma) and present practices (karma). He used the words in the secular sense of right conduct and actual practice. An important theme is the disconnect between dharma and karma in ODL in India and how to repair it.

The elements of the dharma of ODL include:

- *An instrument to democratise education.* This means opening access widely and letting learners manage their learning. Open admission policies assume that it is exit standards, not entry standards, that matter.

- *A means for social justice.* ODL can offer opportunities to people in resource-poor areas, covering a wide geography. Being more inclusive, it is especially helpful for women who lack the independence of movement to attend campus classes.

- *A means for development.* The Commonwealth of Learning's (COL) mission is learning for sustainable development (Commonwealth of Learning, 2018). COL helps governments expand the scale, efficiency, and quality of learning with appropriate technologies, particularly ODL. This is used extensively for capacity building as well as developing skills and professional competence in the working population.

- *Mediating education with technology*. Although at varying speeds, ODL systems are being revolutionised by interactive technologies and open educational resources.

- *Quality as an imperative.* Quality is essential for achieving dharma in distance education. The quality of learning materials, student support services, student evaluation, and administrative services are critical to system effectiveness and ODL's legitimacy and credibility. The public visibility of ODL systems makes them more open to general scrutiny.

- *The teacher as a facilitator*. Teaching in ODL is facilitative rather than expositional. The identity of academics in these systems is complex and inclusive because of the division of labour between the teaching functions of materials preparation and student support.

- *The institution teaches.* In conventional education the teacher teaches, but in ODL the institution teaches (Keegan, 1996). Good logistics, quality materials, and effective student support are important requirements for successful ODL.

Prasad (2018) addressed the karma of ODL in ODL's Indian context, described as "one system, many models" (p. 103). This description also applies to the global network of open universities, giving the trends observed in India wider relevance, including the following:

- *Large student numbers.* The capacity to expand enrolments at low marginal cost is a vital feature of ODL. China and India have ODL institutions with over a million students. They number in the hundreds of thousands in some other OUs. But how large can such systems grow before they become so hard to manage that their effectiveness suffers?

- *Diversity of programmes*. Almost any subject taught in campus universities is available in an OU somewhere. Subjects with significant practical components may require special arrangements, but these can be delivered to high standards. Professional associations, once sceptical about ODL, now appreciate that its flexibility lets institutions offer skills and professional development programmes needed by employers. Short-duration, specialised ODL programmes targeting particular workplace needs are increasingly popular.

- *Involvement of the private sector.* Major industries use ODL for developing human resources in professional and vocational fields, while numerous private providers also offer education and training programmes through ODL.

- *The profit motive.* Because they can add enrolments at low marginal cost, ODL systems that charge tuition fees can generate surpluses once a break-even threshold is reached. ODL in both

private and public sectors can be tempted to skimp on learning materials, support services, evaluation systems, and administrative effectiveness in order to maximise profits.

- *Use of technology*. The use of technology in ODL systems varies greatly. OUs in developing countries often apply technology effectively to their admissions and administrative systems before attempting to use it in the teaching function. One temptation is to enhance profits—but lose quality—by using technology to replace all human interventions in the teaching/learning process.

- *Quality and regulation*. Prasad (2018) focused on quality assurance and regulation in India. Practice varies greatly around the world, but most OUs face quality assurance regimes similar to those for conventional universities. The regulation of ODL varies widely by jurisdiction, from highly restrictive to lax.

How to Address the Disconnect Between Dharma and Karma

The disconnect between dharma (principle) and karma (practice) in India—and ways to mitigate it—have broader relevance to OUs elsewhere.

We note the following:

- Distortion of the goals of open and distance learning. Chasing the surpluses that ODL at scale can easily generate may compromise the social goals being pursued in both public and private sectors. Although dual-mode universities (i.e., on-campus and ODL) are the most prone to subsidise campus operations from the surpluses of their ODL programmes, OUs may also be tempted to use these so-called profits for activities of little benefit to their students.

  Prasad (2018) commented:

  > This amounts to gross violation of academic norms. The money-making orientations in most of the cases result in compromise with quality. It is distressing to observe the attitude of some dual-mode universities which accept ODL students, but exhibit no sense of ownership or pride in them. Their usefulness is measured in terms of surplus generation. It is sickening to listen to some vice-chancellors boasting of their achievements in terms of surpluses generated through distance mode. (p. 65)

  He added: “publicly stated for-profit institutions are preferable to the hypocrisy of publicly-funded institutions making money through ODL and using it for other purposes” (Prasad, 2018, p.65).

- External constraints on the dharma of distance education. Such unethical practices partly explain why regulators sometimes take restrictive approaches to ODL programmes. In some places, ODL offerings are restricted to subjects already in the curricula of campus universities. This is misguided because it ignores the different target groups for ODL and the social needs to which it can respond. Constraining ODL by the rigidities of the conventional system defeats its purpose. Prasad (2018) called ODL in India “an ineffectively over-regulated system” (p. 66).

- Slow adoption of interactive technologies. Although interaction is essential to education, Prasad (2018) argued that expanding its use in India is constrained more by the attitudes of the ODL institutions than by the slow roll-out of the technologies needed to support interaction.

- Lack of professionalism in management and leadership. Large OUs resemble industrial enterprises as much as they do campus universities, but this distinction is not usually reflected in their leadership and management. The result is that they fail to meet students' simple expectations: receiving their learning materials on time, having professional student support, and seeing examination schedules respected.

- The role of teachers in ODL. Ambiguity in defining teacher roles is a challenge for most OUs. Their roles are equally important in ODL and conventional systems. Indeed, they may be more complex in ODL because it uses multiple technologies. A final comment from Prasad (2018) is apposite:

> There is a constant debate in ODL circles about the roles, responsibilities, and relationships [of teachers] with others in the system. Teacher identity is not satisfactorily addressed in ODL systems. ...there is a feeling that teachers in ODL are engaged more in management activities than in academic activities. This may not be a satisfying situation for serious academics. The strengthening of ODL system management may relieve teachers from some of the administrative responsibilities and enable them to make meaningful academic contributions (p. 67).

Prasad's (2018) analysis of the disconnect between dharma (principle) and karma (practice) in ODL leaves us with two observations. First, this disconnect is not unique to India, although the size of its ODL sector gives more examples of it. Second, it is ironic that some OUs are struggling just as the wider higher education system begins to adopt their missions (dharma). This is new. Campus universities did not previously espouse the democratisation of higher education and social justice as goals—save in the occasional rhetorical flourishes of their presidents!

While it is good to see the wider higher-education sector promoting inclusiveness, most of it is far less prepared for this than the OUs, in both attitudes and practice. What must OUs do to recover their pre-eminence in implementing the contemporary agenda expressed in the UN's Sustainable Development Goals (UNESCO, 2018)?

ODL can achieve the ambitious goals that Prasad (2018) set out because it applies technology to the educational process. We now draw on concepts developed in the late 20th century to explore this further.

Revisiting Older Concepts

A first concept is the iron triangle (Daniel, 2010). This shows that distance education—and technology-based learning generally—can break away from the constraints that classroom education faces when trying to balance access, quality, and cost. How an OU exploits this possibility determines whether it can expand student numbers, cut costs, and offer quality teaching—and do it all simultaneously.

A second 20th century concept presents the challenge of ODL as achieving a cost-effective balance between learners' independent study and their interaction with others (Daniel & Marquis, 1979). This

is an important practical implication of the iron triangle. If an OU operates at scale, it costs less to provide materials for independent study than to arrange personal support and tutoring. But, to succeed, most students need some direct human interaction.

Open Universities and the Iron Triangle

Technology's revolutionary contribution to education is to make it possible to increase student numbers, cut costs, and improve quality—all at the same time. OUs are its most powerful expression.

Daniel (2010, p. 51) expressed this graphically as the "iron triangle." It highlights the fundamental constraints inherent in classroom teaching. Putting more students in each class may increase access, but with perceived loss of quality. Enhancing quality by adding more teachers, reducing student numbers, or providing better learning materials increases costs, while direct cost-cutting means either lower student numbers or poorer quality (or both). These constraints have dogged attempts to expand education throughout history, explaining why educational quality is so often equated with exclusivity of access.

Technology allows education to break out of these constraints. Here we understand technology broadly, meaning not only machines and electronics but also, importantly, the basic organisational approaches of specialisation and division of labour described by Adam Smith in the 18th century (Smith, 1776). Wedemeyer (1974) summarised the essential contribution of technology to distance education half a century ago:

> As an operating principle the system is capable, after reaching a critical minimum of aggregation, of accommodating increased numbers of learners without a *commensurate* increase in the cost of the basic learning experiences: i.e. costs must not be directly and rigidly volume sensitive. After reaching the necessary level of aggregation, unit costs should show a diminishing relationship to total system costs (p. 4).

Access. Therefore, OUs are uniquely placed to expand access by increasing student numbers. They should be well-positioned to pursue the goal of serving much wider populations that the United Nations Sustainable Development Goals (SDGs) for 2030 have legitimised. The Millennium Development Goals of 2000 limited their scope to basic education, but the SDGs also target higher education: "by 2030, ensure equal access for all to affordable and quality technical, vocational and tertiary education including university education" (UNESCO, 2018)

Whether an OU can respond to these UN goals depends on the size of their pools of potential learners and the obstacles people might face in enrolling. On these criteria, OUs present a picture of feast and famine. Although overall enrolments in higher education are forecast to increase by tens of millions in the coming decades (UNESCO, 2015) many of these millions are in Africa and Asia, where OUs are already under great pressure.

Meanwhile, OUs in richer countries face shrinking pools of potential learners as well as obstacles to their enrolment. Most (the UKOU is a good example) began operations when access to higher education was severely restricted and part-time study was virtually unavailable. When it opened in 1969 the UKOU had a large pool of applicants—including many school teachers—who were eager to obtain degrees. Although the applicant profile subsequently evolved, the UKOU attracted high enrolments for several decades, reaching over 200,000 in the early 21st century.

Whilst the absolute size of the potential applicant pool may have become smaller, the recent decline in enrolments at the UKOU owed more to the obstacles people faced to enrolling. The massive expansion of UK campus institutions, including more extensive part-time and ODL study opportunities, can hardly be called an obstacle to enrolling at the UKOU, but the UKOU has certainly lost the quasi monopoly on part-time study and distance learning that it once had.

Much more significant, however, was UKOU's loss of state funding, both generally and for particular programmes. Most rich-country governments are cutting financial support to higher education. In the UK, where the recent governing elites have little personal experience of either part-time study or ODL, state funding for these learning modes has been essentially wiped out. The UKOU is in a quandary. Its social mission (dharma) means that the students it attracts are less able to meet steep increases in tuition fees than those in campus universities. Moreover, these older UKOU students, who may already have mortgages and other debts, are often reluctant to take state-supported loans for higher education, even when these are available to part-time students.

For OUs in other rich countries the squeeze on government funding has been less severe than at the UKOU, but their government support has diminished in various ways. The smaller ones have more difficulty attracting political attention than do campus universities, because most legislatures are territorially based, giving campuses strong local support. The Toronto roundtable of open university heads concluded that "most OUs have been the darling of their government at some stage in their development, but it is impossible to retain this status for decades as governments and their political ideologies change" (Daniel & Tait, 2017, p. 4).

Costs. OUs around the world face very different challenges regarding costs. The large OUs in Africa and Asia, which generate surpluses from relatively low tuition fees, have the challenges of adapting the economics of their institutions to changing technology, and of avoiding the temptation, highlighted by Prasad (2018), to spend their surpluses in ways that fail to advance their teaching and student support functions.

OUs in richer countries may, on the other hand, face the necessity of slashing costs generally to compensate for a loss of state funding that cannot be made up by raising tuition fees.

The costing of ODL is well-tilled territory. For example, Snowden and Daniel (1980) argued that with careful design, management, and cost control, distance teaching institutions could be economically viable with fairly low student numbers. Rumble (1992) warned of the competitive vulnerability of distance teaching universities, and Bates (see, e.g., Bates, 2015) has revisited the costing of ODL regularly as teaching and student support technologies have evolved.

Because of their scale, the challenge for OUs in cutting costs lies less in conceiving strategies than in implementing them. OUs cannot change direction quickly without disrupting students' experience. New approaches to teaching and tutorial support need thorough pilot testing before being rolled out at scale.

Quality. The UKOU demonstrated from the start that distance education could achieve quality of scale as well as economies of scale. Given their large student numbers, OUs can, in principle, afford considerable investments in learning materials, student support, and administrative systems to ensure very high quality. Although today's learning media and support systems are different, better integrated, and more diverse than the printed materials, broadcasts and face-to-face tutorials that the UKOU

pioneered in the 1970s, OUs can still enjoy economies and quality of scale. Contemporary technologies let students get more rapid feedback on their work, while teachers can update and revise learning materials more frequently.

In sum, OUs continue to be less constrained by the iron triangle of access, cost, and quality than are campus institutions. It is still possible, with judicious design and management, to increase numbers, improve quality, and cut costs all at the same time.

Independence and Interaction: Getting the Mixture Right

Prasad (2018) flagged a vital question facing all OUs. He wrote:

> It is time to rethink the current model of support services provided to distance learners by using available ICTs effectively. Many specialised agencies are providing tutorial services and conducting free tutorial services under the open tutorial system. The social media are also extensively used by some OUs for support services. The OUs should revisit their systems of support services to make them more flexible and reflective of needs through technology enabled direct-to-home services. The learner support in OUs should be based on the principles of engagement, two-way interaction and building the sense of community and belongingness amongst the learners. (Prasad, 2018, pp.78–79)

Whilst each OU faces its own challenges in providing student support, it does appear that the original UKOU tutoring model requires rethinking in some institutions. This model had teams of full-time academics concentrating on course development, which meant designing materials for independent study, while a much larger group of part-time tutors mediated, either locally or electronically, the interactions between course materials and students.

Although this model served the UKOU well for many years, some weaknesses were always apparent. A writer in the 1970s talked of “a large teaching proletariat and a small academic ruling class” while another lamented that “part-time tutors and the students face similar problems on the outside rim of the Open University wheel” (Daniel & Marquis, 1979, p. 42). Decades of development have exacerbated these issues.

First, the UKOU’s early part-time tutors embarked enthusiastically on a radically novel project. Most were academics with full-time posts in other universities. Some, finding that they enjoyed teaching the older UKOU students more than their own younger students on campus, elected to continue as UKOU tutors for many years. Today, the casualisation of the academic profession has largely swept away such idealism among new recruits. In 2018, Québec’s TÉLUQ found that more than a third of its part-time tutors were also teaching for other institutions (Umbriaco, 2018).

Second, in some OUs full-time academics are becoming somewhat disconnected from the reality of students’ learning in their courses. With earlier technologies, courses might run for several years without significant revisions by the original development team. Today, as courses are presented more interactively through electronic platforms, revisions are more frequent, which requires course team members to stay closely in touch with how students interact with the learning material.

Some OUs are therefore insisting that all full-time professors be substantively involved in tutoring the courses they have developed. Accordingly, the management of full-time and part-time academic staff is

becoming more integrated. In the UKOU, the terms and conditions under which part-time tutors are hired have improved substantially over the years, thus enhancing their status and self-esteem.

In changing arrangements for interaction, OU leaders must consider their impact on institutional economics. The industrial principles of specialisation and division of labour are still key to operating at scale, so OUs must avoid returning to the so-called cottage industry approach to teaching still prevalent on most campuses.

What do Open University Executive Heads Think?

In October 2017, the International Council for Open and Distance Education (ICDE) and Ontario's Contact North | Contact Nord (CN) organised a world conference on online learning in Toronto. The president of CN, Maxim Jean-Louis, convened a closed roundtable of the world's OU executive heads (vice-chancellors or presidents) alongside the ICDE conference so that they could share views on the opportunities and challenges they faced. Professor Alan Tait and the author facilitated the event, where the executive heads shared views on these questions (Daniel & Tait, 2017).

- Open Universities have made openness and access a mainstream concern across higher education (HE) generally. How should they now innovate in their own missions to strengthen their reputations and social relevance? Participants agreed that the UN's Sustainable Development Goals had legitimised this goal of serving wider populations. The challenge is that the big numbers of new students will be in Asia and Africa, where the OUs are already under great enrolment pressure. Two of the OUs represented had face-to-face teaching streams on campus, accounting in one case for half their student body.

- How are open university student demographics shifting? What innovations are needed now? The demographics of OU students are changing in different ways—getting older in some OUs and younger in others. Although some OUs are having to adapt to the habits and attitudes of older learners as students' median and average ages increase, the general trend is in the opposite direction. Most OUs are seeing increasing numbers of younger students, though not usually school leavers. These younger students are not always more technologically savvy than older students and they usually have less money to spend.

- Technologies are expanding the options for ODL—which ones hold most promise? Some of the OUs were teaching entirely online, whereas others used printed materials. All OUs have plans to increase their online teaching, but an important conclusion was that IT can prove most useful in the administrative and student support functions. Speeding up these processes has positive impacts on student progression and retention. In most countries, governments now authorise all HE institutions to offer online and distance learning, putting considerable competitive pressure on the OUs. It is now rare for an OU to have a national monopoly of ODL.

- OUs should operate at scale—what are the implications? The OUs present at the roundtable operated at very different scales, not always proportional to the size of the country's population. Some of the smaller OUs may have made things more difficult by adopting too fully the division of labour and specialisation inherent in the industrial model used by the larger OUs. With the notable exception of the UKOU and its creation of FutureLearn, the OUs present generally were not engaged intensely with MOOCs (massive open online courses).

- Are there opportunities for collaboration among OUs? Most of the OUs represented already had the partnerships they needed. There was, for example, extensive course sharing among the state OUs in India. Partnerships need close attention and management, even when the original agreements are clear, and the challenges of offshore partnerships are several times greater.

- The fundamental challenge for OUs is blending flexibility, quality and scale. How do they achieve it? Flexibility is good, but so is structure. One OU had improved its completion and retention rates dramatically simply by tightening up the regulations about start dates and completion deadlines.

- How do OUs sustain good government relations? This vital aspect of OU management came up repeatedly. Most OUs have been favourites of their government at some stage, but this status can prove fragile as governments and their political complexions change. Success in government relations came from using the considerable scale, power, and reach of an OU to help the government achieve its own education and training goals. The smaller OUs have special challenges, and the near-death experiences of both the Canadian OUs emphasised the absolute importance of nurturing the links between an OU and its government's priorities.

- What terms to use? A refrain throughout the roundtable was that although most OUs felt that the quality of their teaching and support was at least as good as that of the campus universities in their jurisdictions, they—and ODL generally—still had a poor reputation with the public. Some heads felt that using the term 'distance education' or even the term 'open' was not helpful.

Rising to Current Challenges

Most campus universities are now offering or planning courses online. How can OUs retain their competitiveness? Can they also position themselves to respond to the UN Sustainable Development Goals, namely, "by 2030, to ensure equal access for all to affordable and quality technical, vocational and tertiary education including university education" (UNESCO, 2018, p. 1))? Addressing both challenges is a tall order. At a minimum, it requires that OU programmes must be:

- affordable to all students (open as to people);

- offered ubiquitously at scale (open as to places);

- well-governed and managed (open as to methods); and

- effective at teaching (open as to ideas).

These criteria recall the four elements of the founding slogan of the UKOU. How should OUs adapt themselves to meet these requirements today?

Open as to People: Affordability and Economics

A harsh lesson of recent decades is that OUs need economic models that rely on student fees for most of the resources needed to operate. OUs relying on state funding for their regular programmes will become increasingly fragile as governments continue to reduce financial support for higher education.

This also affects campus universities, where state funding is eroding too. Campus universities, however, unlike OUs, do not seek to be affordable to all and can usually set their fees as high as their chosen markets will bear.

This warning against reliance on public funds applies to the general operations of OUs. However, they are well-placed to bid for state support for specific time-limited programmes that governments themselves wish to implement in order to retrain large numbers of people across their jurisdictions. The author's first work in ODL, in the 1970s, was on such a programme. The Quebec Government wanted to retrain all its secondary school mathematics teachers in the space of a few years and gave the task to the TÉLUQ, Quebec's open university (TÉLUQ, 2009).

In their quest for affordability OUs have two advantages. By operating at scale and using technology intelligently they can, after reaching a critical mass of enrolments, see their "unit costs show a diminishing relationship to total system costs" (Wedemeyer, 1974, p. 4). The larger OUs, mostly in Asia and Africa, have already reached the point where student fees support their operations. Their challenge now is to govern and manage these huge organisations effectively. The smaller OUs need to become more skilled at using technology efficiently to cut costs, thereby attracting more students through lower fees.

Correspondence education, in its heyday from the mid-19th until the late-20th century, was mostly offered by the private for-profit sector and entirely supported by student fees. Modern communications technology should enable OUs to re-create aspects of that economy, whilst teaching more effectively than correspondence education was able to do a century ago.

Some private-sector ODL operations are showing the way. A contemporary example is the French company Open Classrooms (2018), created by its 12- and 13-year old founders in 1999. It now reaches over 2 million learners per month with a range of job-related courses and several degree programmes recognised by the French government. Open Classrooms' so-called freemium economic model means that viewing the content is free, but payment is required for mentoring and assessment (see https://en.wikipedia.org/wiki/OpenClassrooms).

Some institutions are developing MOOCs (massive open online courses) in a similar way. Much of the content is freely available, but students pay for assessment leading to degrees and diplomas (see e.g., Deakin University, 2018).

OUs should be leaders, not laggards, in such developments.

Open as to Places: Ubiquity

The founding slogan of the UKOU implied that it would make its courses available everywhere through ODL. Today, most universities that offer online courses boast about the diversity of countries from which they attract learners, even though those learner numbers are dwarfed by those from the home jurisdiction.

There were three good reasons why the UKOU and other OUs were slow to recruit learners globally. First, they had a sophisticated awareness of copyright legislation across the world, which limited their right to distribute learning materials in certain places (see e.g., Open University (2018a)). Second, they aimed to offer all learners a similar experience which, if their teaching and learning systems involved

mentoring or tutorials, was difficult in some places. Third, the setting and collection of fees were not straightforward.

The expansion of the Internet has changed these constraints, but it should also make all universities, particularly OUs, more sensitive to the possible perception that they are engaged in a neo-colonialist project. Such perceptions could be a serious barrier for OUs seeking to contribute to the attainment of the UN Sustainable Development Goals outside their home jurisdictions. For this reason, as well as for greater reach and sustainability, OUs do better to operate overseas through partnerships or consortia. Examples are the UKOU's joint programmes in Africa in teacher education, TESSA (Open University, 2018b) and health education, HEAT (Open University, 2018c); and the University of South Africa's work in Ethiopia (UNISA, 2016).

Such programmes may also provide opportunities for OUs to secure some time-limited funding from the international development arms of their home governments.

Open as to Methods: Governance and Management

Ritzen (2016) summarised contemporary research on the links between governance and effectiveness in higher education by stating that "university autonomy, specifically in reference to academic approach, staffing, internal decision-making, and financial practices, in combination with proper funding, is likely to enable universities to produce graduates with better competencies" (p. 1).

Securing sufficient autonomy to ensure effectiveness is key to the success of an OU. Fortunately, prime minister Harold Wilson's original proposal that the UK Open University be established as a consortium of Oxbridge colleges was abandoned during the planning and implementation process in favour of a royal charter that gave it similar autonomy to the UK's older universities (Perry, 1977). Some other OUs, however, have governance structures that give campus universities—often rivals—considerable control over their programming and operations.

OU Malaysia, for example, is owned by a consortium of 11 Malaysian public universities (Open University Malaysia, n.d.). Fortunately, as a private university it pays dividends to these owners, so oversight by the public universities has been relatively benign. In Canada, the TÉLUQ was not so lucky. It was set up as the distance teaching component of the Université du Québec network of regional campus institutions, which were strongly represented on its governing board. Subsequent inter-institutional rivalries within the network led to no less than seven attempts to close the TÉLUQ (Umbriaco, 2018). Its survival and present success is a tribute to ODL's attractiveness to students.

Once an OU has the autonomy to set its own priorities and strategies, the challenge is managing their effective implementation. OUs are large and complex operations that require competent academic and administrative leadership. In jurisdictions where external political input into the appointment of university executive heads is the norm, nepotism in these nominations makes effective management unlikely. We must hope that, as OUs play an increasing role in achieving governments' own objectives, such as the UN Sustainable Development Goals, officials and politicians will realise that appointing cronies to lead these institutions is a short-sighted policy.

Open as to Ideas: Teaching Effectively

One reason why the infant UK Open University caught the imagination of the public and captured the allegiance of its students so quickly was the originality of its major courses. They not only brought

together different disciplines, but also created new paradigms for teaching some subjects. These academic breakthroughs were largely driven by the development of courses in teams, which Perry (1977) considered to be the UKOU's most important innovation. As well as producing some very exciting courses, these teams also made the UKOU an attractive working environment for academics who enjoyed the robust intellectual arguments that were a staple of their work.

But course teams are expensive. Today, some OUs save money by going to the other extreme: commissioning course materials from outside content experts and having them worked over by internal editors and instructional designers before being released to students. This process is much cheaper than constituting a course team to rethink the teaching of a subject *ab initio,* but does risk presenting current academic orthodoxy in a dull manner. A compromise is for OUs to operate a mixed economy in course development, using cheaper methods for more advanced subjects, but setting resources aside to excite new students with some blockbuster courses.

Some campus universities already do this by allocating resources to celebrated faculty members for them to create exciting MOOCs that may attract learners to their regular programmes. But this may not always work. An Australian academic who took a MOOC on *Xi Jinping Thought* from the elite Tsinghua University wrote that it gave "an unprecedented opportunity to observe the poverty of Chinese state-enforced ideology" (Carrico, 2018, p. 5)!

For OUs, however, teaching means not only developing courses, but also supporting the students who take them. No single approach to the functions of tutoring and mentoring can fit all situations. An OU's size and its communications infrastructure are just two of the factors that will determine how it provides student support. Earlier we quoted Prasad's (2018) conclusion that this is a special challenge for OUs because it is easy to create the "feeling that teachers in ODL are engaged more in management activities than in academic activities" (p. 67).

This is currently a vibrant area of research and development in ODL. OUs can take advantage of the large volume of action research on online teaching generated by campus institutions that are entering the field. The Contact North newsletter Online Learning News is a rich resource for this topic (Contact North, 2018).

Conclusions

Prasad's (2018) analysis of the disconnect between the purposes (dharma) that OUs claim to espouse and their actual practices (karma) set the stage for this paper. Whereas higher education was absent from the Millennium Development Goals, its inclusion in the UN's Sustainable Development Goals for 2030 shows that the purposes of OUs are as relevant as ever. Yet, although OUs have attracted tens of millions of new students in recent decades, some have found it difficult to adapt to changing environments, particularly decreasing financial support from governments and evolving communications technologies.

Revisiting the iron triangle of access, cost, and quality we conclude that ODL can still enjoy advantages over classroom teaching in all three areas, although these advantages may be more challenging to achieve with contemporary interactive systems. These systems also require a rebalancing of the role of part-time and full-time staff in providing independent and interactive learning opportunities for students.

A roundtable discussion among the executive heads of OUs concluded that despite decades of success, the advantages of open and distance education still need to be promoted assertively. OUs need to make the provision of advanced education to resource-poor communities more newsworthy than yet another rearrangement of the world rankings of research-focused universities in rich countries.

The slogan of the UKOU, “open as to people, open as to places, open to methods and open as to ideas” (Crowther, 1969, pp. 1-2) still provides an inspiring vision for all OUs. The challenge is how to implement each of its four elements in a new era.

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Characterizing UNAM's Open Education System Using the OOFAT Model

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Abstract

Mexico's national university (UNAM) is a public mega university with a 46-year history in open education. This article presents an analysis based on the open, online, flexible provision of technology-enhanced higher education (OOFAT) model, developed by Orr and his colleagues (2018). The aim of this analysis was to characterize UNAM's open and distance education system in terms of openness, flexibility, and its business model, in three distinct time periods. According to this analysis, the system has evolved in all areas, and at present has a content-focused approach in terms of flexibility and openness, which differs from the OOFAT at the center approach that is desired. The study also characterized the UNAM system's business model as a prospector-like approach, which highlights the possibilities for instilling innovation through the schools that comprise this system. The analysis allowed for mapping the current situation and thus sheds light on defining the steps necessary for creating an integrally open system.

Keywords: openness, flexibility, Mexico, UNAM, future of education, OOFAT model

Introduction

The purpose of this article is to analyse the evolution of openness and flexibility in three important moments of the Open University and Distance Education System (SUAyED) at Universidad Nacional Autónoma de México (UNAM), by applying the OOFAT (open, online, flexible provision of technology-enhanced higher education) model developed by Orr, Weller, and Farrow (2018). The aim is to identify strengths, weaknesses, and opportunities that might indicate the system's future developments.

History of the Open and Distance Education System at UNAM

UNAM a is public mega university (in terms of Berberoğlu & Berberoğlu, 2015) currently serving almost 350,000 students at the high school, undergraduate, and graduate levels. Of these, 32,000 are enrolled in open or distance programs. The origins of the SUAyED at UNAM can be traced back to the late 1960s when the political environment in Mexico as well as inside the university was in a deep turmoil. This situation inspired the design of innovative public educational models in order to foster inclusion and increased access to higher education (HE). In 1972, Dr. Pablo González Casanova, UNAM's president at the time, launched the Open University System (SUA), with a clear emphasis on academic quality and providing access for those who wanted to pursue educational programs but could not attend a brick-and-mortar classroom (González-Casanova, 1972). The main purpose was to open the university to any interested individual who passed the admission exam, in groups that met at workplaces and cultural centers throughout the country (Gaceta UNAM, 1972; Universidad Nacional Autónoma de México [UNAM], 1983). This was a democratizing strategy that followed the steps of successful projects in other nations (Bosco & Barrón, 2008).

Due to the evolution of the term *open*, and to the changes to UNAM's open system over the years, the use of this term may be confusing. In 1972, and even today, the term *open* was institutionally conceived as alternatives to students' opportunity to attend face-to-face (F2F) classes only a few times a week, mainly on weekends, in order to solve problems, clarify their doubts, and prepare for exams. The concept of open represented a chance to attend fewer sessions than F2F classes, while still following the same academic program and semester calendar of traditional offerings. The new system also implied changes in the interaction of students and teachers. High quality resources, the use of media, and a dynamic dialogue among students were to create a learning context in which evaluation was objective and rigorous, and self-management strategies were encouraged. Procedures and professional development programs for teachers were developed. In the 20 years following 1972, the system matured and also benefited from facing challenges and accomplishing goals. Several university presidents fostered UNAM's growth through programs, projects, and infrastructure. To celebrate its 20th anniversary, an international conference was organized in order to evaluate the experience and identify the perspectives for the development not only of open education but also of distance learning at UNAM (Sarukhán, 1992).

In 1997, a new office to coordinate the open university and distance education (CUAED) was established at UNAM. In 2009, new internal bylaws allowed for a complete SUAyED to be formally organized. The idea was to extend high school and HE to broad sectors of the Mexican population, through including information and communication technology (ICT) and organizing study groups on and off the physical campus (Coordinación de Universidad Abierta y Educación a Distancia, n.d.). In this way, the initial Open University System (SUA) evolved to become the Open and Distance Education System, that includes online education programs with content provided through online platforms where students, teachers, and peers communicate online. The term *open*, in this case, refers to the space (anytime,

anywhere), and to the content (materials, learning and assessment activities, and readings), although there still exists an academic calendar to follow. Some blended programs have been developed as well.

SUAyED currently serves nearly 32,000 students through 59 academic programs, representing around 10% of UNAM's total student population (Universidad Nacional Autónoma de México [UNAM], 2018). At present there are 23 open undergraduate programs and 21 online undergraduate programs, as well as an online high school, 10 online graduate programs, and 4 open graduate programs (Coordinación de Universidad Abierta y Educación a Distancia [CUAED], n.d.). Open and distance education has become increasingly important at the institutional level, especially because of its contribution to expanding enrolment and its ability to enrich F2F education. In the university's 2015–2019 institutional plan, for example, 13 out of 17 strategic programs involve actions under the responsibility of CUAED and SUAyED (Graue, 2017).

The OOFAT Model

This section describes the OOFAT model, in order to better explain the methodology of this study. Orr et al. (2018) used as three core processes of HE as the basis for their model: (a) content (subject knowledge, support and guidance, and learning analytics); (b) delivery (qualities of place, pace, and timing of delivery of content); and (c) recognition (assessment and credentialization to recognize learning achievements). Each of these processes is evaluated in terms of organizational flexibility (the way in which digital technology is used to reduce the need for physical presence and the possibility of adapting given specific circumstances) and procedural openness (inclusion or how the principle of openness is integrated into the core processes).

Orr et al. (2018) conducted a global survey in February 2017. They collected data from 69 HE institutions in 36 countries. With this information, they developed six major typologies (see Orr et al., p. 10):

- OOFAT at the centre: the model is implemented as an integral part of the institution's overall mission.
- OOFAT for organizational flexibility: OOFAT supports flexibility of higher education provision across all aspects of the conceptual model.
- Content-focused OOFAT: providers concentrate specifically on the element of content development and delivery.
- Access-focused OOFAT: providers focus on access to content and support
- OOFAT for a specific purpose: implementation of the model is geared to a very specific function or market.
- OOFAT for multiple-projects: there is no unified strategy, but rather the provider undertakes very different initiatives and experiments with different aspects of the OOFAT model. This was the most frequent category in their study, evident in 28 of the 69 institutions.

Orr et al. (2018) also studied institutions' business models by analyzing the seven core aspects originally proposed by Taran, Boer, and Lindgren (2015, as cited in Orr et al., 2018) in their typology. These core aspects include: (a) products and services, (b) target group, (c) communication channels, (d) legacy or new value chain, (e) competitive advantage, (f) networks, and (g) profitability and sustainability. Orr et al. asked respondents to characterize their business models by choosing one of two response options within each aspect. Their first option focused on developing existing activities and the second option on breaking into new markets (see Orr et al., pp. 33–34).

Orr et al. (2018) classified business strategies into two groups. The first group is described as defender-like strategies, and includes three specific strategies:

- Fixed-core model: more traditional in terms of target market, and products and services, but innovating in other areas. This was the most frequent selection in their study.
- Outreach model: using the same products and services but innovating in target group recruiting and communication channels.
- Service-provider model: focusing on the target group and innovating in communication, and products and services.

The second group is described as prospector-like, and includes two main strategies:

- Entrepreneurial model: with innovative strategies for products and services, target group, and communication.
- Entrepreneurial model with fixed core: the strategy is focussed on a fixed core, but innovation is built around it.

Orr et al. (2018) delivered their OOFAT questionnaire via Survey Monkey, and it was answered by any individual who received the instrument and decided to collaborate. This could have created disadvantages for some universities, which may have been underrepresented. For instance, in the case of a UNAM, only a representative from the School of Chemistry participated in the survey. This respondent provided data that exclusive to that school's context, rather than the open and distance education system of the entire university. For this reason, this article complements the comparative analysis made by Orr et al.

The 6 typologies and the business strategies may lead to:

> The formulation and effective implementation of comprehensive institutional strategies, which provide clear focal points for where a university or college has chosen to integrate digitalisation into its key processes. *HEIs can use the typologies developed in this study either to determine their current position or to decide which type of model they aspire to* [emphasis added]. (Orr et al., 2018, p. 12)

With that purpose in mind, this study applied the OOFAT model in order to analyze the state of openness and flexibility within three important moments in the evolution of open and distance education at UNAM.

Methodology

The purpose of this study was to identify the openness and flexibility of SUAyED throughout a period of 48 years, in order to visualize both their evolution and current state. This will help determine the model CUAED is aiming for in the near future.

The selected model for this analysis was OOFAT (Orr et al., 2018). This choice was made for two main reasons: first, because it facilitates the visualization of the state of openness and flexibility in educational programs, and second, because this analysis will complement the efforts initiated by Orr et al. (2018) with the goal of mapping the state of openness in educational institutions all over the world. Due to the fact that CUAED is an institution aimed at social inclusion and justice, a model based on openness and flexibility constitutes a good match.

Four knowledgeable reviewers were selected to evaluate openness and flexibility of SUAyED in three distinct periods of its evolution: (a) 1972, when the open education system was introduced; (b) 2005, when the first online HE programs were deployed; and (c) 2018, when the assessment took place.

One of the reviewers (A) has been the researcher most committed to the study of the history and evolution of SUAyED, and a second (B) has been the director of CUAED. The remaining two (C and D) held important positions at CUAED at the time of the study. Collectively, they represent 74 years of experience in the open and distance education field.

The study entailed three stages. The first stage, the openness and flexibility analysis consisted of the following steps:

1. Each reviewer was asked to complete the OOFAT tool: reviewer A evaluated the years 1972 to 2005, while reviewers B, C, and D evaluated 2018. Then, each reviewer received the questionnaire, in order to assess the nine areas they were to evaluate. This handout included further description of the content of the question and an example of what it meant to have a low or a high evaluation in each item (see Orr et al., 2018, pp. 46-47).

2. For the 2018 final score, the mean of each rating by the three reviewers in charge of evaluating that period was calculated for each question.

3. The results of the three periods were plotted on the OOFAT graph.

4. The resulting graphs were then compared to the six models presented by Orr et al. (2018) in order to identify the best fit for each of the three periods that were analyzed.

The second stage of the study addressed the topic of UNAM's business model. Reviewers B, C, and D defined the type of core aspects of the institution, using the modified typology from Taran, Boer, and Lindgren (2015, as cited in Orr et al., 2018).

The third stage addressed planning. Based on the results of the first two stages, the type of OOFAT and business model for SUAyED were defined, and the actions and elements needed to achieve them were identified.

Results

Openness and Flexibility Models

Table 1 shows the evaluation in three historical moments: (a) 1972, when SUA was created; (b) 2005, when online undergraduate programs were first launched; and (c) 2018 for the present time.

Table 1

OOFAT Historical Analysis of SUAyED's Pivotal Transformations

OOFAT dimension	1972: Creation of the Open University System	2005: First distance programs	2018
Content delivery: flexible	1	4	3.5
Content delivery: open	1	3.5	3.8
Support delivery: flexible	1	3	4.2
Support delivery: open	1	3	3.2
Content personalization	1	3	2.2
Content production: open	1	3	3.1
Assessment: flexible	1	1	2.2
Formal recognition: flexible	1	1	2.2
Recognition: open	1	1	1.9
Total	9	22.5	57.8

As can be seen in Table 1, the SUAyED system has evolved over its 46-year history. In the beginning, there was practically no openness or flexibility in the areas of content, support, and recognition. As time went by, increasing scores demonstrate the progress of the system's evolution. Figure 1 illustrates the evaluation of the three moments that were considered. Blue lines represent 1972, purple lines represent 2005, and red lines correspond to 2018. Current strengths are in bold, green text, while weaknesses are in blue text.

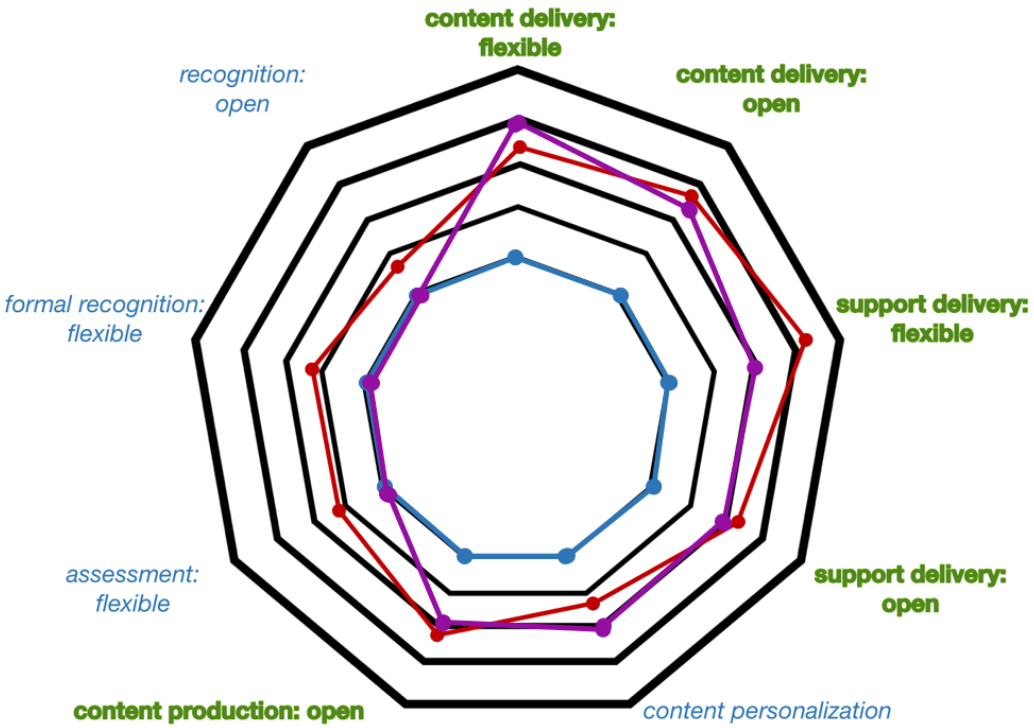

Figure 1. OOFAT analysis of UNAM's SUAyED offerings.

This analysis reveals that CUAED follows a content-focused approach. CUAED has advanced in aspects such as content delivery, content production, and content support, while in other aspects such as assessment flexibility, content personalization, and recognition, continued work is still necessary. These results were compared with those of the other universities. Orr et al.'s analysis (2018) indicated that other institutions following this approach include: (a) Indira Gandhi National Open University (IGNOU) in India; (b) National Open University of Nigeria (NOUN); (c) University of Rwanda; (d) Hamdan Bin Mohammed Smart University (HBMSU); (e) United Arab Emirates; and (f) The University of Warwick, UK.

Business Model

Regarding the business model, it was clear that UNAM, as a whole, follows a defender-like approach; it is a traditional institution that follows conservative procedures and guidelines. On the other hand, SUAyED (representing 19 schools in UNAM) clearly follows a prospector-like approach, due to its digital nature and innovative educational initiatives. Table 2 shows how the core aspects proposed by Orr et al. (2018) align with the SUAyED initiatives that correspond to this prospector-like approach. The examples in the second column come from "dimensions of the business model: prospector-like approach" (Orr et al., 2018, pp. 33–34).

Table 2

SUAyED Initiatives (Products, Services, and Projects) That Correspond to the Prospector-Like Approach

Core aspects	Prospector-like approach	SUAyED initiatives
Products and services	We offer something different, complementary or alternative to the main provision.	Perseo Who's who English as a second language Coding
Target group	We are targeting a new (or non-traditional) market.	MOOC Pre-UNAM communities Increasing share of young learners
Communication channels	We interact with learners through new or innovative relationship channels (physical or virtual).	Online counselling service B@UNAM as innovation hub Matcha
Legacy or new value chain	We develop, produce, and maintain our offering through exploration of new approaches and innovation.	Trajectories UAPAs B@UNAM as innovation hub
Competitive advantage	Our competitive advantage comes from new, unfamiliar competences (e.g., new or emerging technologies, innovation in working practices).	Artificial intelligence (AI) Lego model
Networks	We operate primarily in non-traditional or (dynamic) networks (e.g., alliance, joint-venture).	Coursera Ceibal Foundation—ANII *Revista Mexicana de Bachillerato a Distancia* NGO ("Juntos en línea")
Profitability and sustainability	We maintain profitability through new processes to generate revenues, or cost-cutting in existing processes.	Ministries of Education Mexico City's government Private schools Professional development courses

Note. Descriptions of the prospector-like approach comes from Orr et al., 2018.

Specific SUAyED initiatives are described below.

Products and services. Some initiatives that reflect the way SUAyED offers something new, complementary, and different from the traditional provision include:

- Prerequisite programs. At both at the high school and university levels[i] these programs have a selective and a formative purpose. Applicants must comply with all academic requirements in order to enter the programs, but they also develop digital literacy and acquire knowledge about themselves as learners. For example, at B@UNAM learners identify their level of reading speed as well as their reading comprehension, as related to their age and educational level, and work to develop and improve those skills. At the HE level, they enter the PERSEO system[ii] that consists of a series of tests and questionnaires to identify cognitive strengths and learning risk factors (Herrera, Díaz, Soto, Vázquez, & Cervantes, 2018). Qualitative mechanisms are also available, such as a document called *Who's who* that counsellors at the high school level develop for each individual student. This clarifies the learner's strengths and weaknesses, as well as the type of educational interventions that have been successful for that individual. Counsellors share this document with tutors in order to improve their knowledge about each learner and tailor their interventions to suit each one's needs.

- Pre-university communities. In order to help ensure high school graduates are ready to enter specific undergraduate programs, several sites have been developed to prepare freshmen for the challenges of college education, by using B@UNAM materials. These include diagnostic tests to identify content information learners lack, and courses to improve their knowledge in those areas. The first one was the Pre-Med Community[iii] (Vadillo, Macedo, & Terrazas, 2017).

- No tuition fees. There are no tuition fees for UNAM students in the high school or HE programs. This contributes to an institutional-wide acceptance of openness.

The complete entrance process of this support program is shown in Figure 2.

Figure 2. Entrance support process for candidates seeking entrance to undergraduate programs. Source: Own elaboration.

Target group. The most important initiative that exemplifies new or non-traditional markets is the massive open online course (MOOC) catalogue. To date, there are 78 MOOCs[iv] and 8 specialization programs. This initiative has enabled UNAM to reach students in 194 countries around the world (J.

Maggioncalda, personal communication, November 18, 2018). Over 1.9 million students have registered, representing more than a million unique persons. They constitute a diverse population in terms of age, academic background, ethnicity, socioeconomic status, and reasons for enrolling in these courses.

In association with Mexico City's government, a blended high school was established in a poor and high crime neighborhood (Ruiz, Peláez, & Madrigal, 2015; Sabath, García, & González, 2016). Due to political reasons, the only public high school in the area was closed and for more than 40 years there was no facility to serve the local population. The blended school used B@UNAM's online materials.

Another new target group consists of high school graduates and college freshmen who are not B@UNAM learners but benefit from the diagnostic tests and remedial courses in the HE schools that have the pre-university communities based on B@UNAM's online resources.

In order to promote the learning of English as a second language, CUAED has established agreements with the British Council in Mexico (British Council, 2018) in order to develop an open platform to learn English as a second language. There are also resources to learn Spanish, Italian, and French[v].

Communication channels. SUAyED's academic match site is an example of a new or innovative communication channel. An educational social network[vi] was developed in order to select teachers with specific leadership and innovation profiles to review the syllabi of B@UNAM's new curriculum. In the future, this social network will also be used for other academic endeavours.

Legacy or new value chain. There are several examples of SUAyED offerings being developed and maintained through exploration of new approaches and innovation. For some time, B@UNAM has been SUAyED's experimental lab, and it now functions as an innovation hub where new ideas, processes, and methodologies are evaluated before they are shared with other schools and university centers. Materials from B@UNAM have also been used to produce support resources for struggling students in one of the F2F systems at UNAM[vii], for freshmen in the medical[viii] and architecture[ix] areas, and for the general population's lifelong learning purposes.[x]

B@UNAM's new online courses include a diagnostic assessment of content at the beginning of each week that allows students to use the best trajectory for their unique needs, whether the remedial one that includes prerequisite resources, the regular one, or a track for gifted students. This learning architecture is described in detail in Vadillo (2017).

The process followed at B@UNAM to develop or to update a course is considered an opportunity to explore new ways of delivering content and creating learning experiences. Therefore, the structure as well as the look and feel of each course differs, which also promotes the students' ability to adapt to new learning environments.

Atomization of content through the development of learning units has opened new possibilities to use, recombine, and share content, both among teachers and students of the university and other information consumers in Mexico and other countries. This so-called Lego approach has made it possible to enrich online courses with videos from UNAM's MOOCs as well as with learning bits, brief learning online resources. At the high school and HE levels, dozens of open professional development courses have been deployed.[xi]

During the period 2016 to 2018, important developments and changes have been introduced, instrumental to pursuing CUAED's goal of using open and distance education to promote social inclusion and justice. All B@UNAM content, and content from some undergraduate programs, have been transformed into self-paced learning units; these are fully available for anyone interested in using them.[xii]

B@UNAM's proposed mission statement, not yet published, now reflects a connectivist, personalized, and learner-empowered position: here each learner builds a strong foundational culture to think about the world and improve it. The proposed vision underscores the institution's connection to society and to the complex environment: each learner expands his/her talents while developing solutions that foster common good, in complex, tech-enhanced, dynamic and diverse contexts. However, it is clear that internal policies need to be stated in order for this mode of delivery to gain broader acceptance. Moreover, in order to promote inclusion, all programs must comply with universal design for learning principles, which is also a recommendation from the Organisation for Economic Co-operation and Development (OECD), as outlined in their publication (2018) and which B@UNAM lacks.

Permanent revision of practices must be undertaken. As well, ways to reduce the dropout rate and improve timely graduation are important tasks to be considered. In the 2007 version of B@UNAM, for example, a skills map was developed, and all learning activities were aligned to it, so students could practice those skills intensively (Vadillo & Villatoro, 2009). The curricular map currently under development will seek to foster improved computational, scientific, humanistic, social, and mathematical thinking. Important issues such as digital citizenship (Gleason & von Gillem, 2018) have been incorporated as a transversal axis of development.

Competitive advantage. In terms of new and emerging technologies, some of UNAM's innovations are described below.

- Artificial intelligence. CUAED is working on content personalization through different strategies such as artificial intelligence (AI). AI should inform changes and should be included to foster deeper comprehension and to improve the learning experience of each student. Teaching and learning practices will change with the inclusion of machine learning, intelligent tutors, and learning analytics. These elements will have an impact not only in personalizing the learning process, but they will also inform CUAED's decision making related to planning, designing, and operating its programs. In Orr et al.'s (2018) survey, only two universities said they were using AI in some way.

- Intelligent tutoring system (ITS) and chatbot. As of January 2018, B@UNAM has been working on the development of an intelligent tutoring system (ITS) to be included throughout its regular courses and learning units by 2020, in order to improve learning outcomes and graduation rates. The tutor is called ADA (an acronym for *learning assistant*, in Spanish). Analysis of the questions students pose to their tutors indicated that most questions are related to technical aspects, such as "where is content X?" or "how can I download the readings?" These kinds of questions can be answered by a well-trained chatbot, thus freeing time for the human tutor to develop more significant interactions with students. This project is funded by a UNAM innovation office.

- Agile methodologies. In CUAED, new practices in terms of work dynamics have been established. Adaptive leadership is one of the work strategies recently integrated in B@UNAM in order to promote educational innovation:

> Adaptive leadership is an iterative process involving three key activities: (1) observing events and patterns around you; (2) interpreting what you are observing (developing multiple hypotheses about what is really going on); and (3) designing interventions based on the observations and interpretations to address the adaptive challenge you have identified. Each of these activities builds on the ones that come before it; and the process overall is iterative: you repeatedly refine your observations, interpretations, and interventions. (Heifetz, Grashow, & Linsky, 2009, p. 33)

It is now common practice to ask somebody in the team to play the role of staying in the balcony (i.e., observe teaching and learning processes as they take place) or call on an outsider to provide feedback. These strategies have been an important source of information for improving B@UNAM projects, for instance, by asking young students for their opinion about the design of courses.

Networks. The following are several examples of CUAED operating in non-traditional networks.

- Coursera. Alliances with joint-venture educational models such as Coursera have given CUAED the opportunity to expand education. Coursera only establishes partnerships with selected universities, and UNAM has been recognized as its partner since 2013.

- *Revista Mexicana de Bachillerato a Distancia*. Public institutions offering high school programs in Mexico have formed a network and journal where they publish items regarding educational models, and their pitfalls and successes. This initiative represents a valuable learning and contribution space.

- NGO. *Juntos en línea* is an example of collaboration between a university and a non-for-profit organization. UNAM provides its online high school program and the NGO supplies an Internet-enabled computer facility for small and underserved communities in rural Mexico which lack a F2F high school. Thus, indigenous students and learners with a very low socioeconomic status have the opportunity to earn a high school diploma.

- Ceibal Foundation, Research and Innovation National Agency of Uruguay (ANII). B@UNAM is part of a project founded by ANII. The aim of the project is to develop an instrument for assessing the evolution of computational thinking (K–12 level), with the collaboration of researchers from four countries.

Profitability and sustainability. Intra-, inter-, and cross-border institutional collaborations and partnerships have been established. Intra-collaboration with other UNAM programs has been intense since 2016, especially with the curricular innovation office (CODEIC) and the ICT general office (DGTIC).

CUAED has also closely collaborated with Mexico City's Ministry of Education in order to develop and implement several blended and distance programs. Recent projects include the design of a blended and interdisciplinary high school curriculum based on the current problems and context of Mexico City (Vadillo, et al., 2018). Each course portrays one of the city's major problems, and students are expected to build a solution that they can test in a small scale, while using the knowledge they just acquired. This strategy follows the innovation key action from the OECD's *Teaching for the Future*, which recommends that "teaching related to global challenges needs to be adapted across subjects and go beyond knowledge derived from textbooks. Alternative education methods can be useful in developing these competencies" (Organisation for Economic Co-operation and Development [OECD], 2018, p. 103).

Funding is also obtained from private schools that use B@UNAM's program and online materials,[xiii] as well as from online professional development courses for private schools.

Discussion

The analysis as a result of applying the OOFAT model made it possible to assess and map UNAM's openness and flexibility in terms of content, delivery, and recognition, as well as study aspects of its business model. This instrument can help other educational institutions to identify and prioritize innovation strategies, future projects, and alliances.

> [The study] can be used by university and college leadership for benchmarking similarities and differences and for cooperative peer learning between institutions. The database of cases and the guidelines for reviewing current strategies, which accompany this study, aim to facilitate this learning and evaluation process." (Orr et al., 2018, p. 8)

As we saw in the Results section, other universities following this content-centered approach share the characteristics of being large and traditional institutions that benefit from the use and creation of OER, and serve economically disadvantaged populations.

Looking at the overall results, the areas of recognition and assessment are in need of more attention at SUAyED. For instance, credentialization is a major challenge to be addressed. Gallagher (2016) described some innovations in this area such as bootcamps, MOOC-based certificates, and competency-based programs. He goes on to explore the challenges these approaches involve:

> The trends are from theoretical to practical, from traditional face-to-face instruction to online, from monolithic to short-form, from instructor-led to self-paced, from static to more adaptive, and from faculty-driven design alone to job-market-aligned. Creating new types of credentials and optimizing new approaches to credential delivery (such as competency-based education and new online models) will require universities to engage in new approaches to design, refresh programs more frequently, focus more intentionally on outcomes, and leverage the still-emerging interdisciplinary field of learning science. The landscape of new university credentials is still in an early phase of development, with most efforts in experimental and pilot form. (Gallagher, 2016, pp. 166–167)

CUAED will also need to deal with how to recognize learning through MOOCs. For example, Witthaus et al. (2016) presented a model, based on a traffic light metaphor, with six key elements to be taken into account: (a) identity verification of the learner; (b) suitable, supervised assessment; (c) informative credentials (digital certificates or online badges); (d) quality assurance; (e) awarding credit points; and (f) partnerships and collaboration with institutions or bodies with potential for recognizing student learning. Each of these elements is observed in non-formal, open learning assessment in order to determine how strong they appear, and described by the traffic light metaphor, namely green (very strong presence), yellow (mild presence), or red (no presence).

As well, instruments to facilitate follow-up of the OER materials offered by CUAED, such as the framework by Huang, Hu, and Liu (2017), have been proposed to assess the openness maturity of OERs.

Following their mission, HE institutions carry out academic, intellectual, and formative work incorporating a vast array of perspectives, liberty of thought, critical knowledge, and the continuous search for new knowledge, all while innovating learning and teaching processes. Digital technologies have profoundly changed HE and this movement cannot be stopped. They threaten the controlling and regulating power of curriculum, that began in 1633 at Glasgow University. DeRosa and Robinson (2017) stated that with a more extensive use of OER, the adoption of open educational practices has also increased, and students have begun to develop digital content while building knowledge. Digital technologies also represent a meeting space of diverse communities, and have an important social, cultural, and symbolic content for this university.

At present, current SUAyED programs have an important impact on the campus-based system. This supports the findings of Xiao (2018) who claimed in his recent article that:

> Distance education was influenced by campus-based education and in turn influences the latter, leading to convergence of the two modes. To do justice to distance education, its contribution to campus-based education is greater and in more aspects than vice versa. (Xiao, 2018, p. 5)

Other challenges that CUAED, as a public university, must address in the immediate future, some of which are also aligned with those found by Tait (2018), include the following:

- To design socially inclusive models that embrace the cultural diversity of Mexico and overcome the barriers that prevent interaction and articulation of groups, cultures, and perspectives. According to Maassen, Nerland, and Yates (2018) "reconfiguration of knowledge is achieved through the contributions of multiple actors in multiple settings, which serve to connect (or disconnect) knowledge forms and practices in the wider epistemic culture" (p. 197).

- To promote a socially responsible agenda at UNAM in order to contribute to the solution of complex problems of our time.

- To permanently innovate the educational structures that support the academic programs.

- To develop digital technologies that are aligned with the learning demands and nature of the educational projects.

Despite all the instruments at hand, the innovation path it is not an easy task. It requires the ability to stay in the "the productive zone of disequilibrium" (Heifetz et al., 2009, p. 18), or looking for what Astro Teller, CEO of the Google X projects calls "dynamic stability" (Friedman, 2017, p. 35). This implies learning to work and walk together in contexts of uncertainty, using learning not only as an objective but as way of facing every new initiative.

There are some limitations to this study. Due to the size of SUAyED and the diversity of schools that it comprises, the analysis may have been at times global and in other moments more molecular, so the perspective may lack precision.

Conclusion

The purpose of this study was to characterize UNAM's SUAyED in terms of its openness, flexibility, and business model, in three distinct time periods. Results show SUAyED has evolved and it can be characterized as currently having a content-focused approach in terms of openness and flexibility, and a prospector-like approach in terms of its business model. SUAyED's main assets are openness and flexibility both in content production and delivery, as well as in support. It must evolve in the areas of recognition and assessment, in order to achieve the so-called OOFAT at the center approach that will allow the system to become integrally open. B@UNAM, the program that was, from the beginning, created with all of the advantages of online education, approximates the desired OOFAT at the center approach. One possible scenario is to provide a pre-university community to address learners' prerequisite knowledge and skills gaps as they enter a HE program, a technology-enriched experience throughout the first semesters, and finally a dual education approach where students profit from face-to-face, online, and blended learning opportunities.

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