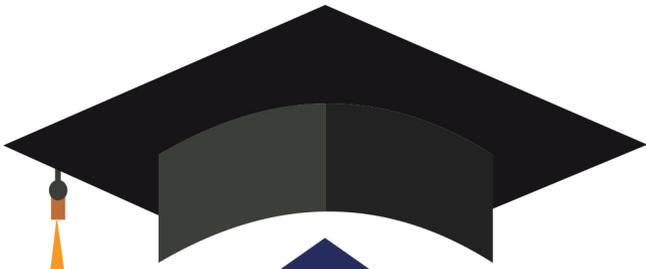


EDUCATION IN A COMPETITIVE AND GLOBALIZING WORLD

OPEN HIGHER EDUCATION IN THE 21ST CENTURY



Ritimoni Bordoloi
Prasenjit Das
Editors

NOVA

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IN THE 21ST CENTURY**

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RITIMONI BORDOLOI

AND

PRASENJIT DAS

EDITORS



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PREFACE

The rapid expansion of globalisation and knowledge explosion, advances in the field of ICTs, economic restructuring, allocations of financial grants in the higher educational sector, promoting more outcome based education etc. have collectively contributed to the educational reforms in different countries of the world. In the 21st century, apart from conventional education, different open learning models have been able to provide myriad opportunities to all those who want to enlighten themselves through meaningful learning experiences. This also helps to understand the democratic and pluralistic philosophy of education that tends to ensure that no one is left out from the ambit of education. But the fact is that student retention and drop out have been two of the lingering challenges faced by nearly all open educational institutions across the globe. Moreover, when the whole world had been hit by the Corona virus (COVID-19) Pandemic and when the educational institutions across the globe had to be closed down to avoid further viral infection, the challenges of providing uninterrupted education to one and all received unprecedented attention giving a new thrust to open education as one of the most viable means to cater to the needs of the learners.

To understand the developments, functional aspects and the future of open higher education in the context of the 21st century, it is therefore immensely important to critically discuss the role of open universities as

well as the prospects and challenges of open higher education, which is also the main purpose of this NOVA book entitled *Open Higher Education in the 21st Century*. This book is edited by Dr. Ritimoni Bordoloi and Dr. Prasenjit Das, both having more than 10 years of experience of working and researching in an open university located in the North Eastern part of India. The main objective of the book however is to discuss the prevailing state of open higher education in some developed and developing countries, mostly located in South Asia and South East Asia, so that a basic understanding about the role and management of the open universities could be ascertained. The authors of the book represent several countries such as UK, USA, Brazil, Turkey, Malaysia, Bangladesh, Tanzania, Ghana, the Philippines and India. Scholars, readers and the members of the academia, particularly from South Asia and South East Asia, will be immensely benefitted as most of the book-chapters deal with the new dimensions of open learning system specifically in these two regions.

This book is organised into two Sections. Section A contains a total of 6 chapters that mostly discuss different dimensions such as the philosophy of Open and Distance Learning (ODL), the upcoming interventions in open education, the changes brought by online education and so on. These chapters also explore some of the latest educational possibilities and developments through different context specific discussions on the contours of ODL, use of Mobile Learning, Game based learning, integration of Artificial Intelligence in education and so on. The chapters in Section B provide certain country specific experiments with open education, sustainable education, skill-based education, Technology Enabled Learning (TEL), techno pedagogy, community and the ODL institutions, quality assurance in open universities, education for empowerment and so on. Therefore, as intended, the discussions provided in the book would appeal to the readers from various other disciplines such as Humanities and Social Sciences, Education, Economics, Sociology, Management, Information Technology, Computer Science and Engineering and anyone consulting this book will be able to view open higher education through a different lance. Besides, this book will be handy reference for scholars, teachers and students to carry out further research into the field of

open higher education and the emerging new educational technologies.

SECTION A.
OPEN AND DISTANCE LEARNING:
POSSIBILITIES AND PROSPECTS

Chapter 1

**EXPANDING HIGHER EDUCATION
FOR SUSTAINABLE DEVELOPMENT IN ASIA:
ARE THE OPEN UNIVERSITIES
UP TO THE TASK?**

*Sir John Daniel**

UK Open University, Milton Keynes, UK

ABSTRACT

Open universities were the most significant development in global higher education in the last third of the 20th century. Some grew to be very large in size (over one million students) and collectively they expanded access to higher education substantially, particularly, but not only, in Asia and Africa. Moreover, by making higher education available off campus to people of all ages, many of them studying part-time, they expanded the missions of universities in ways that conventional campus universities have slowly begun to adopt. Forecasts suggest that tens of millions of

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additional students will want to undertake higher education in the next 20 years. The open universities, of which there are now over 50 worldwide, many of them in Asia, would seem well placed to play a large role in catering to these students. However, at the end of the second decade of the 21st century, it appears that many open universities are losing strength and impact. Some have never really got off the ground, others may have become too large to be manageable, most have difficulty in adopting modern educational technologies and some have been savaged by changes in government policy. Yet at the same time, largely because of COVID-19, campus universities are expanding their distance and online offerings as never before. This chapter will review the current state of open universities and suggest how they might better rise to the challenges of the 21st century, when the UN Sustainable Development Goals include the expansion of higher education and the improvement of its quality.

Keywords: open universities, educational technology, government policy, sustainable development

INTRODUCTION

Open universities were the most significant development in both the ends and means of tertiary education in the last third of the 20th century. As regards ends, or purposes, their creation reflected a widespread realization that tertiary education should be made available to a much wider public than the young full-time students who were its traditional clientele in the mid-20th century. Serving adult students, often in full-time employment, who wished to study part-time, required new approaches. Tertiary education had to arrange to take its programs to these adult students, rather than requiring them to come to campuses for daytime lecture courses.

As regards means, starting in the 1960s there was an explosion of new media of communication. Radio and television extended their reach and were followed by the rapid development of information technology as computers became ubiquitous, making possible the Internet and, more recently, a plethora of social media.

Both the spirit and the practical import of these innovations were nicely captured by Lord Geoffrey Crowther in his speech to the inaugural ceremony of the UK Open University in 1969 (Crowther, 1969). He said:

“We are open as to methods. The original name was the University of the Air. I am glad that it was abandoned, for even the air would be too confining. We start, it is true, in dependence on, and in grateful partnership with, the British Broadcasting Corporation. But already the development of technology is marching on, and I predict that before long actual broadcasting will form only a small part of the University’s output. The world is caught in a communications revolution, the effects of which will go beyond those of the Industrial Revolution of two centuries ago. Then, the great advance was the invention of machines to multiply the potency of our muscles. Now the great new advance is the invention of machines to multiply the potency of our minds. As the steam engine was to the first revolution, so the computer is to the second.”

“It has been said that the addiction of the traditional university to the lecture room, is a sign of its inability to adjust to the invention of the printing press. That, of course, is unjust. But at least no such reproach will be levelled at The Open University in the Communications Revolution. Every new form of human communication will be examined to see how it can be used to raise and broaden the level of human understanding.”

Crowther’s speech also gave the UK Open University its strap-line: ‘open as to people, open as to places, open as to methods and open as to ideas’. The principles encapsulated in this slogan have been adopted, to a greater or lesser extent, by the more than fifty open universities that have been created around the world in the intervening years.

These open universities were not, of course, the first attempt to teach at a distance. Some cite Saint Paul’s epistles to the early Christian churches as a – very successful – distance learning initiative. Centuries later, when the industrial revolution combined mass-production printing with postal systems based on rail transport, education by correspondence developed rapidly and reached millions of people from the second half of the 19th

century onwards. Notwithstanding its reach, however, the public rarely accorded much prestige to correspondence education. It was mostly offered by private sector firms, which were often accused of giving greater priority to generating high revenues by recruiting large numbers of students than to providing them with the quality teaching materials and support that would enable them to complete their courses and programs successfully.

In the mid-20th century, and notably in the design of the UKOU, there was a conscious attempt to address the shortcomings of correspondence education, an ambition facilitated by the injection of significant public funds. First, the UKOU made large investments in the learning materials that it provided to students. These were developed by multi-disciplinary teams of academics and media professionals to ensure their intellectual quality and then produced to a high standard using a variety of media (print, audio, video, computing). Second, it created an extensive student support system with thousands of part-time tutors serving learners all over the country, both providing feedback on their assignments and offering optional face-to-face tutorial sessions in every locality. Third, the UKOU was backed by a sophisticated IT system that enabled it to keep track of student progress and offer counselling as required.

The first generation of open universities largely espoused the ideals and practices of the UKOU as far as their resources allowed. Some of them became very large (over one million students) and, collectively, they have expanded access to higher education substantially, particularly, but not only, in Asia and Africa. Moreover, by making higher education available off campus to people of all ages, many studying part-time, they expanded the missions of universities in ways that conventional campus universities are slowly beginning to adopt. Forecasts suggest that tens of millions of additional students will want to undertake higher education in the next 20 years. The open universities, many of them in Asia, would seem well placed to play a large role in catering to these students.

METHODS

In the first part of this chapter we shall describe the salient features of these open universities, drawing on the early work of Daniel (1995) and a report by Mishra (2017).

The second section will provide a summary of the challenges facing open universities as we begin the third decade of the 21st century – having now passed the 50th anniversary of the establishment of the UK Open University. The essence of these challenges is that some conventional campus universities were already adopting aspects of both the missions and the methods that were pioneered by the open universities even before the COVID-19 pandemic hit. As the pandemic persisted into 2021 their adoption of the methods of Open and Distance Learning (ODL) became more firmly embedded. It had taken several decades before most traditional universities made serious attempts to recruit part-time and adult students, and even longer before they started to adopt the technologies of distance education. Indeed, it was only with the emergence of the Internet in the late 1990s that most campus institutions began to take distance education seriously. This section of the chapter reflects discussions held at a Roundtable of executive heads of open universities convened before the World Conference on Online Learning held in Toronto in October 2017 (see: Open University – EADTU, 2017).

In the third part of the chapter we suggest what open universities must do in order to remain the pre-eminent providers of tertiary education at a distance to adult and part-time students. They will need to effect reforms in most aspects of their operations, from strengthening their institutional commitment to openness, through curriculum and pedagogy to the use of technology. In this final section, we shall draw on the conclusions of a useful webinar on ‘The Future of the Distance Education University’ held by the EDEN, the European Distance Education Network, on March 5, 2018 (EDEN, 2018).

OPEN UNIVERSITIES: A DIVERSE REALITY

More than 50 open universities have been established since the UK Open University was granted its Royal Charter in 1969 and new ones are still emerging. A recent example is the Odisha State Open University in India, established in 2015 (<http://osou.ac.in/>). The Asian Association of Open Universities lists 45 full members (AAOU, 2018) and the Asian countries of the Commonwealth account for a significant proportion of these institutions. In his excellent report, Mishra (2017) lists 27 open universities that responded to his survey, including 15 in India alone (two additional private state universities in India did not answer the survey) as well as institutions in Bangladesh, India, Malaysia, Pakistan and Sri Lanka. There are also large open universities in non-Commonwealth Asian countries. Some of China's Radio and TV Universities (RTVUs) have lately been accorded the status of open universities. Both the RTVUs and China's Open Universities are loosely associated with the Open University of China, (formerly the China Central TV & Radio University), a system that accounts for many millions of students. Some other non-Commonwealth Asian countries with well-established open universities are Iran, Japan, Thailand, Turkey and Vietnam. Student numbers in each of these institutions are in the tens or hundreds of thousands (e.g., Iran's Payame Noor Open University with nearly one million students). Although focused on the Commonwealth open universities, the study by Mishra (2017) can serve as a good illustration of the general features of open universities and their diversity. We summarize their profiles as follows.

Open universities:

- Are usually distance-teaching institutions, although some (e.g., the OU of Hong Kong) also have programs for on-campus students. Only a minority (14 out of 27) offer their programs mainly online, the others use multi-media distance education methods with considerable use of print.
- Enroll relatively large numbers of students (e.g., Bangladesh OU – 500,000; AIOU Pakistan – 1.2 million). The 27 open universities

surveyed by Mishra enroll a total of some 4.5 million students with an overall gender balance close to 50/50, although with wide variations among institutions.

- When taken as a group, teach programs at all ISCED levels in a wide range of subjects.
- Have considerable attrition rates. Mishra calculated ‘output rates’ by comparing enrolment and awards in a particular year. The results varied from a high of 55% for the UKOU to a low of less than 5% for the Netaji Subhas Open University. We note, however, that whatever teaching methods are used, programs aimed at part-time adult students usually have higher attrition rates than programs taught to full-time students in classrooms.
- Rely very heavily on the use of part-time teachers (a total of nearly 200,000 in the 27 open universities that responded to Mishra’s survey – compared to fewer than 8,000 full time teachers). There is, however, a wide range of practice: the ratio of part-time to full-time teachers varies from a high of over 500 at the Allama Iqbal OU to under two at the UKOU.
- Are mostly financially comfortable. Broadly, those institutions with large student bodies that support themselves mainly on tuition fees generate surpluses, whereas those that have depended on significant state support have experienced difficulties as government funding has been cut.
- Are not, in most cases, substantially engaged in research. The UKOU, which has some world-class research groups, is a notable exception to this generalization. Where the other open universities are beginning to engage in research, favored topics are: open and distance learning for sustainable development; ICTs and learning technologies; open education resources; quality assurance; and tracer studies.
- Identify their top three priorities for the coming years as: strengthening student support and the eLearning infrastructure; the development of skills program; and quality assurance.

- Can have a major impact on modern economies. The UKOU produces the third highest number of graduates employed by the world's largest tech companies in that country, exceeded only by Oxford and Cambridge, and produces more corporate CEOs and managing directors than any other UK university.

THE CHALLENGES

As we begin the third decade of the 21st century, however, it appears that, with some notable exceptions, open universities generally are losing speed and impact. Some have not yet really got off the ground, others have become too large to be manageable, most have difficulty in adopting modern educational technologies and some have been savaged by changes in government policy. This section reviews the current state of open universities and our final section suggests how they might better rise to the challenges of the 21st century. A key challenge is encapsulated in the UN Sustainable Development Goals, which include the expansion of tertiary education to reach tens of millions of new learners and the improvement of its quality.

Nevertheless, whatever the current challenges they face, it is important to acknowledge that the open universities have already changed the paradigms of higher education globally. They have drawn attention to the learning needs of a wider and older range of people and demonstrated that teaching in classrooms on campus is not the only way to reach them. As a direct result, higher education systems have grown enormously. Most campus universities, now well aware of this large pool of unserved learners, are acquiring skills in new ways of reaching them, notably through online programs. In some countries, this awareness is heightened by demographic trends that are reducing the numbers of the young people that have been the traditional clientele of face-to-face teaching institutions. The question is: how should open universities dress now that the 'conventional' universities are stealing their clothes? Are open universities now the victims of their own success?

Here, I pay tribute to the work of two colleagues in addressing this topic. Dr. Ross Paul succeeded this author as vice-president of Athabasca University and then some years later as president of Laurentian University. Since retiring as president of the University of Windsor he has specialized in the study of university leadership and management. So, inspiration has been drawn from Dr. Paul's paper: *Open Universities: A Storied Past but an Uncertain Future?* (Paul, 2016).

Professor Alan Tait has been a colleague for many years, both at the UKOU and when we worked together to create the European Distance Education Network (EDEN) in the 1990s. Professor Tait worked with the author in 2017 on a project that is the basis for this section of the chapter. The 27th ICDE World Conference on Online Learning took place in Toronto in October, 2017 and was an enormously successful event that attracted some 1,400 delegates. We took advantage of this large gathering of researchers and practitioners of open and distance learning to bring together the executive heads of open universities to discuss the contemporary challenges their institutions face. This took the form of a one-day Roundtable.

The planning process for the Roundtable gave some useful insights into the current state of open universities. Preparations began in autumn 2016 with the identification of nearly 60 open universities on all continents. Invitations – and later reminders – were sent to the executive heads of these institutions in October 2016 and elicited 22 replies. We worked with this subset of heads to identify the topics of most concern to them and to develop an appropriate agenda for the Roundtable meeting.

Then, beginning in March 2017, Professor Alan Tait interacted with the respondents by questionnaire and through telephonic interviews. He distilled his findings into a 2,500-word text '*Open Universities: the next phase*', which was sent to the respondents before the Roundtable (Tait, 2017). Some twenty executive heads confirmed their attendance by September 2017, but in the event only nine of them were able to participate in the Roundtable in Toronto. The others had to withdraw, some at the last minute, because of delays in obtaining visas or for various family, political or institutional reasons. Restricting attendance to executive heads and not

accepting substitutes undoubtedly limited the number of open universities that could be represented. However, the heads welcomed this opportunity to hold candid discussions with their peers in a closed setting. A larger question is why more than half of the 50 'open universities' originally approached never replied at all despite reminders.

The programme for the Roundtable was developed around the topics for which the executive heads had expressed most interest. Its format reflected their wish to spend the day interacting with each other. Therefore, apart from Professor Tait's short presentation of his overview, '*Open Universities: the next phase*', the day was wholly devoted to sessions during which the participants could interact with each other. Every executive head present got the chance to work with every other head in the course of the day. A report of the event was circulated to participants (Daniel & Tait, 2017).

Seven topics were discussed at the Roundtable.

Missions

First, are the missions of open universities evolving? All agreed that open universities have made openness and access a mainstream concern across higher education generally, although in some countries conventional HEIs (Higher Education Institutions) are still doing little to address this. The OUs continue to extend their missions in an incremental manner, notably using technology to make registration, study and feedback more convenient. Two of the OUs present, Wawasan Open University in Malaysia and OU Hong Kong, now have full-time on-campus students alongside their distance offerings. In Hong Kong, the numbers on campus (9,000) almost equal those studying at a distance. Teaching on campus brings these OUs to the attention of the local population.

The formal identification of tertiary education in the new UN Sustainable Development Goals has legitimised the goal of serving wider populations. The challenge is that most of the tens of millions of new students will be in Asia and Africa, where the OUs are already under

significant enrolment pressure. Is there a limit to how large an OU can become without losing effectiveness? Are OUs becoming complacent once they become mega-universities? Should they be more ambitious?

Demographics

Second, how are OU student demographics shifting? They are changing in different ways depending on the country— a few towards older students, but mostly towards younger students, although not necessarily to school leavers. However, many of these younger students are not coming to OUs for undergraduate degrees but for graduate certificates, diplomas and short courses that can be an asset in the workplace.

Competing to Win

Third, how do OUs compete to win? Which technologies hold most promise? Some of the OUs at the Roundtable now teach entirely online, whereas most outside the West use printed materials. All have plans to increase their online teaching, but IT is proving most useful in the administrative and student support functions. OUs using paper for teaching now have IT systems for admissions and the processing of assignments. By speeding up processes these have positive impacts on student progression and retention, while also reducing corruption. The general view was that focussing technological innovation too much on pedagogy misses more promising opportunities for its use.

Operating at Scale

Fourth, a session aimed at sharing experiences of mastering the use of technology at scale revealed exceptions to the general correlation between an OU's enrolments and the size of its national population. While most of

the mega-universities (100,000+ enrolments) are in large population countries (e.g., India, China, Nigeria) some countries with populations over 100 million (e.g., Philippines) have fewer enrolments in their OUs than those serving much smaller populations in Canada. This raised the question of whether some of the smaller OUs have handicapped themselves by adopting too fully the division of labour and specialisation of functions characteristic of the industrial model of the larger OUs.

It was surprising to find that, with the notable exception of the UKOU and its creation of FutureLearn, the OUs generally have not engaged much with MOOCs (Massive Open Online Courses). This proved to have been a mistake when the COVID-19 arrived in 2020. The pandemic caused millions of people worldwide to look for free online courses of short duration in order to continue their education during lockdowns and ‘stay-at-home’ orders.

Collaboration and Partnerships

Fifth, most of the OUs at the Roundtable already have the inter-institutional partnerships they need. There is, for example, extensive course sharing between the state OUs in India. However, partnerships need close attention and management, even when the original agreements are clear. One OU that is itself formally a private institution has had some bad experiences in trying to collaborate with private sector organisations. The challenges of partnerships are several times greater when they are offshore.

Blending Flexibility, Quality and Scale Effectively

Sixth, offering flexibility to students is good, but so are effective regulations. In the Netherlands, the OU has improved its completion and retention rates dramatically simply by tightening up the regulations about start dates and completion deadlines. It is necessary to put reasonable

obligations on students in order to make them give some priority to their studies.

A refrain throughout the Roundtable was that whereas most of the OUs felt that the quality of their teaching and support was at least as good as that of the conventional HEIs in their jurisdictions, they – or ODL generally – still had a poor reputation with the public. Some heads felt that using the term ‘distance education’ – and even the term ‘open’ was not helpful. Clearly, some OUs have not yet managed to shed the unflattering image that they inherited from correspondence education.

Government Relations

Whilst there was no session at the Roundtable devoted specifically to government relations, this vital aspect of OU management came up repeatedly. 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. Success in this vital relationship comes, not surprisingly, from trying to use the considerable power and reach of the OU to help government achieve its own education and training goals. This will often mean shifting the focus of the academic staff, in particular, to new aims. The smaller OUs have special challenges and both the Canadian OUs have lived through near-death experiences, emphasising the absolute importance of nurturing the link between an OU and its government’s priorities.

We conclude this section with three observations.

First, open universities are a very diverse reality. The descriptor ‘open’ conceals great variations in size, mission and pedagogy. Second, whether the terms ‘open’ and ‘distance’ are helpful or not, the open universities are proud of what they are doing to open up higher education and bring it to new places. Third, without underestimating the challenges of the wrenching changes that the OUs feel they must make for the future, they are confident that they have the right values and vision for the times.

DISCUSSION

How Can Open Universities Stay Ahead?

At the end of the first section of this chapter we noted, citing Mishra (2017), that the open universities he surveyed shared three priorities for the coming years: strengthening student support and the eLearning infrastructure; the development of skills programs; and quality assurance. It is interesting to juxtapose these priorities with the discussions held in a webinar on ‘The Future of Distance Teaching Universities’ by the European Distance Education Network in March 2018 (EDEN, 2018). The four speakers were Professor Tony Bates, Sir John Daniel, Dr. Ross Paul and Dr. Antonio Teixeira. Participants in the webinar asked the speakers about various threats that newer developments pose to open universities. Here is a lightly edited version of the questions and the speakers’ responses.

Question 1

Could MOOCs with full accreditation replace existing distance education universities?

Answer (Professor Tony Bates)

“Not unless they come up with an effective business model or really redefine MOOCs. At the moment, for ‘open access’ MOOCs that end up with an institutional degree, institutions in the USA are charging around US\$20,000 - \$40,000 because of the high cost of quality assessment and learner support” (see: <http://wp.me/pi2SZ-2QR>).

“Accreditation is a challenge that is somewhat country specific but MOOCs have been having trouble being accredited in the USA. Although the institution may give credit, the accrediting bodies in the USA have not been recognizing the qualifications, especially but not exclusively the professional associations. This may change as the Trump administration somewhat deregulates accreditation, but it is still almost impossible to

move accreditation for distance learning programs across state boundaries, for instance, so a student taking a distance learning course or program from an institution in California from their home in Kentucky may not have that qualification recognized in Kentucky (a similar situation exists in some provinces in Canada). Erasmus has by and large got over that problem, but Europe has its own issues here.”

“In some cases, where employers are desperate for qualified workers, this may not matter - the institution’s credibility will be what matters, so for instance MITx’s Micromasters (<https://micromasters.mit.edu/>) may carry more weight with employers than a Master’s degree from a less prestigious institution. Note also that, although the distance-taught BSc in Mining Engineering at Queen’s University was built in collaboration with Ontario mining companies, if a graduate wants to move outside Ontario or into another engineering field they may have problems if the program is not accredited with the professional association of engineers.”

“However, we are in a transition period between traditional degrees and qualifications and building new models of accreditation that meet the rapidly changing demands of a digital society and economy. We will see new models emerging and they may well not be coming from distance teaching universities and so could be a real threat. What distance education universities should be doing is to partner with traditional universities to build new models of accreditation and new qualifications, and to lobby for more flexible transfer of credits and more flexible qualifications.”

Question 2

Do open universities need a new business model to contribute to the SDG4?

Answer (Dr. Ross Paul)

“I believe that all universities, open and conventional, need new business models “to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”.

“Open universities have the advantage of long experience with accredited asynchronous learning courses and programs, but their reliance on the industrial model requires very large enrolments and fairly regimented programs of study for sustainability”. So, the key questions for me involve how well the predominant industrial distance education model is suited to an educational world increasingly driven by the needs of digital learners – instant feedback, e-mail and text interaction, significant student involvement in course design and delivery, degrees of self-pacing, inter-disciplinarity, etc., - all in a customized accredited academic framework.

“Open universities need to change dramatically to achieve the objectives of the SDG4, perhaps even more dramatically than do conventional universities. The principal challenge for conventional universities is to integrate their approaches to online learning as part of a deliberate strategy, one that requires a much stronger institution-wide approach to teaching and learning that directly challenges the traditional and almost sacrosanct authority of the professor in the classroom. Open universities have to come at the same goals from the opposite side – providing much more individualized attention to students. This requires a complete overhaul of the industrial model.”

“Open universities also have to do a much better job of student support. I confess that I was unhappy with the UKOU’s decision to close 7 of its 9 regional offices, not least because in a presentation to a UKOU board retreat about 10 years ago I placed them at the heart of the UKOU’s then success.”

“Open universities in the West need a new business model for their very existence, although open universities in Asia and Africa will be sustained for years to come by the overwhelming demands for access to tertiary education.”

“This short answer is easy. It is much more difficult to envision exactly what a particular open university has to do to undo the troublesome parts of its industrial model, become more flexible and support its students in a cost-effective way.”

Question 3

If recognition and validation of non-formal learning takes off, how will this impact open universities?

Answer (Dr Antonio Teixeira)

“This will have a major impact not only on open universities, but on the entire higher education systems. New education providers will emerge, of course! But, traditional (distance or face-to-face) institutions will basically prevail. But they will have to adapt in order to survive. The critical element is how they will facilitate the transition combine non-formal and formal learning certification. Because of their greater institutional flexibility and capability to adjust to different and changing contexts, I believe distance education universities will be more prepared to explore this opportunity. This will be most notably the case of open universities. In fact, universities will have to transform their awards systems, making them more modular and personalized, which will represent a competitive advantage for open universities.”

Question 4

How can open universities ensure they stay relevant for the skills needed in the job market - especially when many students already have work experience and are looking to integrate what they learn into practice?

Answer (Dr. Antonio Teixeira)

“Working students represent the main target group of open universities today, at least in Europe (e.g., at the Open University of Portugal working students account for over 90% of the total number enrolled in formal programs). Many non-formal learners are also taking advantage of the learning opportunities provided by the open universities, which differ from other higher education institutions. Because of their higher institutional flexibility and their mandated social mission, open universities connect more closely with society and should have greater sensitivity to emerging societal needs. In the future, as traditional higher education institutions open up and start providing digital flexible

education at a large scale, open universities will have to go a step further. They will have to introduce a more extensive combination of prior learning recognition with new competence-based and modular forms of learning assessment and certification. Also, they will increasingly allow learners to co-design their own courses. In a network society, open universities will have to use a network learning approach. Thus, it will be critical for them to enhance their institutional flexibility by using collective intelligence. As with other kinds of institutions, open universities will use crowd sourcing to scale up their capacity.”

Question 5

What are the particular challenges for open universities in middle-income and poorer countries?

Answer (Sir John Daniel)

“The key task for open universities in middle-income and poorer countries is to stay very close to their governments in order to help them achieve their public policy goals in tertiary education. These goals are various. Some governments flirt with the global university rankings and spend large amounts of money (and sometimes engage in dubious practices) to move one or two of their ‘elite’ institutions up by a few places in these rankings. Malaysia took this infatuation with rankings to a ridiculous extent, while Saudi Arabia is open about paying Nobel laureates to put their names on research papers from some of its universities in order to improve the bibliometric data that feeds into the rankings.”

“Most governments, however, also realize that educating and training the mass of their people to engage successfully in 21st century work is really their major challenge in tertiary education. Open universities can do much to help in this area and powerful government-OU links are developing as a consequence. For example, Universitas Terbuka (UT) in Indonesia helped the government implement a massive teacher development program. That project is pretty well complete, so UT and the Indonesian government are now working on collaborations in other areas of massive need, such as health care.”

“Another example is China. For a long time its Radio & TV universities (RTVUs) were regarded by the national and provincial governments as definitely second rate and were therefore constrained as to the programs that they could offer. However, faced with the need to provide lifelong learning for some 600 million people, the government has turned to the RTVUs, promoting some of the them to ‘Open University’ status and allowing them to offer four-year programs. The *quid pro quo* is that they also pick up the lifelong learning agenda on a massive scale, which they are doing with exciting use of media. The former Shanghai RTVU, now the Shanghai Open University, has a particularly intense symbiotic relationship with its city government.”

“Clearly the lifelong learning agenda will require OUs to get much better at teaching practical subjects through short cycle programs online. This requires a variety of partnerships. Combining the scale and reach of an OU with the facilities of local partners for face-to-face and practical sessions is powerful.”

These lessons were brought home powerfully by the COVID-19 pandemic. In the case of the UKOU Blackman (2020) commented:

“The pandemic is wreaking awful damage to health and economies but it has spurred interest in learning. The OU’s own polling shows that, in mid-May, 36 per cent of adults in the UK had decided to learn something new or considered starting a free on-line course. Free on-line courses have seen huge increases in enrolments. The polling revealed that one in seven adults had started one, including 32 per cent who had been made redundant, 20 per cent of those who had been furloughed and 22 per cent of 18 to 44 year-olds.”

“The OU’s OpenLearn platform hosts almost a thousand free on-line courses. The past year has seen a record 13.6 million visitors, up from 8.9 million the year before. Many people across the UK turned to OpenLearn during the UK’s lockdown. We responded quickly to their needs, creating content hubs for home schooling the kids, how to teach on-line and mental health. There was a striking increase in demand for skills and employability-based courses, many seeing ten-fold increases in enrolments during lockdown.”

CONCLUSION

In winding up this chapter, we stress that tens of millions of additional Asian students will seek tertiary education over the next decades. The inclusion of tertiary education in the UN's Sustainable Development Goals for 2030 reflects member governments' convictions about its economic and social importance. Open universities should play a major role in achieving the SDG target because they were created with the aspiration of being open to people, places, methods and ideas. They aim to operate at scale using all available technologies to bring quality tertiary education to all who can benefit from it, thus equipping people to lead fulfilling lives in the 21st century.

To date, unfortunately, the reality of a good number of open universities in Asia has been somewhat disappointing. Either because of lack of resources or a failure to focus their efforts on quality and student support, some of these institutions have not yet managed to put the poor reputation of correspondence education behind them. The Mishra (2017) review, however, provides hope. It found that the open universities identified strengthening student support and the eLearning infrastructure, the development of skills programs, and quality assurance as their key priorities.

If the open universities can implement these priorities, they should find themselves in an increasingly favorable situation. With the target date of 2030 for the Sustainable Development Goals less than a decade away, governments will likely shift their own priorities from the nurturing of elite universities to the provision of tertiary education for the mass of their citizens. The open universities are the institutions best equipped to help them achieve this challenging ambition.

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Chapter 2

**PURSUING THE ELUSIVE TRIANGLE OF
ACCESS, EQUITY, AND QUALITY LEARNING:
DISTANCE LEARNING MODELS IN THE
HIGHER EDUCATION OF SOUTHEAST ASIA**

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ABSTRACT

One of the current challenges in Asia is educating a large and growing population of young people from early childhood to the tertiary levels of education. This challenge continues to be magnified during this current time of the COVID-19 pandemic, which has affected all levels of education and schooling in Asia and around the world. As the population across Asia continues to grow, there is an increased demand for access to higher education. In response to this demand, government leaders and educational policymakers emphasize the critical role of Information and

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Communication Technology (ICT) in meeting the demand for higher education. The purpose of this chapter is to examine distance learning models in higher education in Asian countries. The chapter employs a literature review methodology (Creswell & Creswell, 2017) to describe and report on the use of distant learning models in higher education across Asia. The chapter particularly focuses on Southeast Asia. The examination of the literature includes examples of distance learning models—such as open universities—that deliver their curricula to a mass of higher education students through ICT. The chapter also describes the collaborative initiatives of distance learning and open universities in higher education in Southeast Asia countries. Promising higher education initiatives—like Open Educational Repositories—are also discussed as ways to utilize ICT in distance learning in order to increase access and promote equitable learning pedagogies with innovative and higher-quality outcomes.

Keywords: ASEAN, distance learning, elusive triangle, global equity, higher education, ICT, open universities, Southeast Asia

INTRODUCTION

The century of Asia has emerged and is here. Economists and policymakers have long predicted how the continent of Asia will become the central, global hub of economic power throughout the twenty-first century (Pink, 2005; Schwab, 2016; Tonby, 2019). The ICEF Monitor (2015) explained, “By 2050, the world will see a dramatic shift in global economic power away from advanced countries and toward Asia” (para. 1). In this current time of the COVID-19 pandemic, Asia has certainly commanded global attention as China was the epicentre for the first outbreak of COVID-19. The story of Asia, though, is not just about pandemics, it is also a story of an ever-expanding population who are young, mobile, and well-educated. Tonby (2019) explains in more detail, “44 percent of international students in higher education are Asian, 50 percent of growth in consumer consumption—consumer demand—over the next decade will come in Asia. The Association of Southeast Asian Nations (ASEAN) countries are quickly becoming the fourth-largest

economy” (para. 2). As the population across Asia continues to grow, there is an increased demand for access to higher education.

In response to the demand, government leaders and educational policymakers emphasize the important role of Information and Communication Technology (ICT) in developing new, open, and distant learning spaces for the advancement of higher education (Bandalaria, 2018; Lan Hou, Qi, & Mattheos, 2019; Songkiao & Yeong, 2016; The Head Foundation, 2019). International governing bodies, like the United Nations and World Bank, support the consistent implementation of digital technologies to sustain development and education (UNESCO, 2018; World Bank, 2015). Yet, as Bandalaria (2018) asserts, meeting the demand for higher education—especially in the Southeast Asia context—requires more than just bandwidth, hardware, and technological know-how.

Meeting the demand for higher education in Asia also requires new models for thinking about education in the twenty-first century. Such models need to be able to respond to the challenges of the Fourth industrial revolution (Schwab, 2016), which requires new ways of thinking about education and innovative ideas about ways to deliver education. Likewise, the higher education models also need to be able to address what Naik (1975) calls the “elusive triangle” (p. 3) of providing equality within a high quality education system to a large quantity of learners. In the twenty-first century, the elusive triangle can be termed as a global equity challenge (Authors, 2020) of ensuring equitable learning practices with inclusive access that are situated by high-quality learning outcomes. The purpose of this chapter is to describe and report on distant learning models in higher education in Asian countries with a particular focus on Southeast Asian countries.

The rest of the chapter is organised into four sections. First, I report on the literature review methodology that centres this study. Next, I examine the literature to define key terms and to report on examples of distant learning and ICT uses in higher education in general. Then, I will describe the context of implementation of distant learning and ICT in higher education in the Association of Southeast Asian Nations or ASEAN countries.

Finally, I will conclude the chapter with a discussion of the collaborative efforts among ASEAN countries with universities in places like China and Japan that are utilising ICT to increase access and promote equitable learning pedagogies with innovative and high quality outcomes.

METHODS

Globalisation, automated economies, and technological advancements have all created a greater urgency around the world for the development of students who possess world-class skills (Zhao, 2010). This urgency has necessitated that policymakers and leaders in higher education think and develop innovative ways to prepare more students with a greater number of skills and knowledge areas that are responsive to the global society. As stated earlier, the purpose of this chapter is to describe and report on distant learning models in higher education in Asian countries. I use a literature review methodology in order to meet this purpose. Creswell and Creswell (2017) explain how a literature review should include a systematic way for conducting an initial summation of knowledge about a problem or phenomenon under study. They recommend that a systematic way of conducting a literature review includes: (1) developing a set of research questions to guide the study; (2) identify the selection criteria for the literature review including key terms or words to begin the search for the literature; (3) locating the literature in reliable databases and from international reports and peer-reviewed journals; (4) checking the relevance of the literature; (5) reading the literature and begin coding into categories; and (6) re-reading the literature, organising the categories into themes, and report out the findings. Creswell and Creswell's (2017) outline for a systematic method of conducting a literature review serves as the foundation for this review. I start with an identification of the research questions that guide this literature review.

Research Questions

Two research questions guided the literature review inquiry for my study:

- 1) What are examples and models of distance learning and Information and Communication Technology (ICT) uses in higher education?
- 2) In what ways, if any, is distance learning and Information and Communication Technology (ICT) being implemented in higher education in the Association of Southeast Asian Nations or AEAN countries?

Selection Criteria

To conduct this literature review, I developed a list of selection criteria to help guide the systematic methodology for the review. For example, I located candidate studies for this literature review using the EBSCO research database which allowed for simultaneous searching in databases like Academic Search Complete, ERIC, Education Research Complete, and Google Scholar. I narrowed my search criteria to studies that were in country reports published by international organisations like the United Nations (UN), the United Nations Development Program(UNDP), United Nations Educational, Scientific, and Cultural Organisation (UNESCO), and the World Bank.

I also search for studies that were in peer reviewed journals and published within the past ten years (2010-2020). This ensured that the studies chosen for the literature review were an accurate representation of ICT in higher education in the regions under study. I searched the databases using combinations of the following keywords and terms: “distant learning,” “distance learning,” “distance learning models,” “higher education,” “information technology,” “information and communication technology,” “IT,” and “ICT.” Some keywords denoting a particular

geographic location were also used like “ASEAN,” “South Asia,” and “Southeast Asia.” Once I had identified the possible research studies, I investigated the References section of each study in order to examine the cited research for other potential studies that I could include in the literature review.

FINDINGS

I organize the literature review findings by answering the two research questions that guide the review. In the first subsection, I report on distance learning and ICT uses in higher education. I start this section by defining the key terms from the literature. Then, I describe and summarize studies related to use of ICT for distance learning in higher education in general. In the section subsection, I narrow in on how the implementation of ICT and distance learning in higher education in the context of Southeast Asia is to be made.

Theme 1: Models of Distance Learning in Higher Education

Before I report on the models of distance learning in higher education, I will define the key terminology in this field. It is important to define these key terms as they have particular meanings within the context of literature review. In particular, I will define how distance learning, IT, and ICT are all defined in the literature.

Distance Learning

Distance learning is also referred to in the literature as distance education. It is a means of learning over time and a separated geographic space usually with the aid of some form of technology. Dietrich, et al. (2020) explain the origins of distance learning was to support students—usually at a higher education level—to complete their education off-campus and through an independent study. In distance education, the roles

of students and teachers can after being quite different than what unfolds in the traditional classroom space. The teacher is not the sole source of knowledge and information; the actual content and curricula becomes a primary focus. While distance learning was once supported by correspondence type courses that relied on the postal service to send the curricula; now most distance learning is delivered over the Internet or with downloadable learning platforms. Traxler (2018) explains that with the delivery of distance education over the Internet it provides many opportunities for different educational delivery of learning in asynchronous and synchronous ways. It should be noted that, though, there are barriers to distance learning including equitable access to consistent and reliable communication platforms. For the purposes of this chapter—and similar to the UNESCO (2002) definition of distance learning—I define distance learning as a process of education where teaching is conducted in space and time from the learners, so that most if not all of the learning happens through a virtual medium like the Internet, the learning for the communication between teachers and learners is through an artificial medium, either electronic or in print.

Information Technology or IT

Pelgrum and Law (2003) assert that by the end of the 1980s, the term “computers” was replaced by “IT” (information technology) in business language. This change in terminology signified a subtle, but important conversion from computing technology to technology’s capacity to exchange information. Information technology was expanded to the term ICT around 1992, when email started to become available to the general public (Law, Pelgrum, & Plomp, 2008; Pelgrum & Law, 2003). Law, Pelgrum, and Plomp (2008) explain how IT has had an etymological evolution. Yet, in higher education literature, IT is most often associated with technology that relates to learning with the use of a personal computer or laptop. For the purposes of this chapter, I will define IT as information technology that is transferred with the aid of a digital device like a laptop, personal computer, tablet, or smartphone.

Information and Communication Technology or ICT

People use information technology to gather information, analyze information, and communicate with one another. The definition for information technology also evolved into the term information and communication technology or ICT, which is a word that captures the importance of telecommunication as it relates to sharing information technology. There are a variety of different meanings for ICT and the definitions for ICT often reflect the wider context in which the technology is situated. For example, the United Nations Development Program (UNDP) views ICT as the range of electronic and digital technologies which people utilize to manage information and knowledge. UNDP (2003) explains, “ICTs are tools used to produce, store, process, distribute, and exchange information. These tools encompass ‘old’ technologies like radio, television, and telephone and ‘new’ technologies like computers, wireless technology, and the Internet” (p. 3). Policymakers and educators assign meanings for ICT according to the wider context and to their purposes for the technology (Author, 2014; Pal, 2008). For the purposes of this chapter and much like the UNESCO (2015) definition, I define ICT as the digital tools—like laptops, smartphones, and tablets—that allow for the creation, exchange, transmission, and storage of information through the Internet and other broadcast technologies like radio, satellite, and television.

Distance Learning Models in Higher Education

Distance learning as a pedagogical way of delivering and teaching curriculum has been in existence for over a century. Greenberg (2020) explains how the nascent for distance education was in Europe and the United Kingdom. It was called correspondence education and professors would mail educational curricula to students. The students would complete the curricula and, usually, take an exam that they would mail back to the professor to be graded. Currently, the demand for distance learning has greatly increased due to the COVID-10 pandemic, which is a novel coronavirus that affects the respiratory system of humans and animals. The COVID-19 pandemic has affected educational systems across the globe.

Dietrich, et al. (2020) estimated that “1.725 billion learners were affected by university closures in response to the pandemic” (p. 2448). In response to the pandemic, the United Nations, UNESCO, and the World Health Organisation have all recommended the use of distance learning programs in higher education in order to curb the spread of COVID-19 (Dietrich, et al., 2020; Greenberg, 2020). Such a recommendation meant that educators—and continue to have to quickly adapt—their curricula and pedagogy to distance learning models.

The literature reveals a number of models of distance learning, which make use of Internet based course management platforms that allow for the integration of curricula, discussion boards, email, and multimedia in one learning environment (Durden, 2020; Greenberg, 2020). Distance and online learning allows for the synchronous and asynchronous delivery of instruction, which in turn means that students have more flexibility for how and when they complete the course assignments.

One model of distance learning is the open university model, which has become increasingly popular in the last 50 years (Durden, 2020). The open university concept is founded on principles like accessible educational delivery with technology, democratisation of education, flexibility of scheduling, massification of education, openness, and tutoring support (Bandalaria, 2018; Bozkurt, 2019). The Cape Town Declaration on Open Education (Open Society Institute, 2007) defines and explains that open universities, “draws upon open technologies that facilitate collaborative, flexible learning, and open sharing of teaching practices to empower educators to benefit from the best ideas of their colleagues. It may grow to include new approaches to assessment, accreditation and collaborative learning” (para. 4). Today, there are open universities all across the globe that serve millions of students. For example, India’s Indira Gandhi Open University (IGNOU) is the world’s largest open university system and serves over four million students (Noronha, 2017). Anadolu University in Turkey is one of the oldest open universities and serves almost two million students (Bandalaria, 2018).

Table 1 (adapted from Bandalaria, 2018) captures the current estimated enrollment numbers in large, open universities around the world as well as

when these institutions were established. As Table 1 illustrates, open universities are a popular and growing form of distance education. Another model of distance learning is the Massive Open Online Courses, which are known by the acronym: MOOCs. Premised on open education models of learning, MOOCs reflect the notions around the massification of education. Scott (1995) explains that massification of education is a way to democratize and be responsive to the rapid increase in student enrollment in higher education. Massification of education stands in contrast to the classist notion of the university being an elite centre of privileged knowledge only for a select few. Many MOOCs are free and are completely online courses with a common enrollment numbers being a thousand students to even tens of thousands of students. The jury is still out on the implementation and impact of MOOCs. The literature shows that many students are dissatisfied with MOOCs and few actually complete an entire MOOC program of study (Cagiltay, et al., 2020; Kalman, 2014). The pace of some MOOCs and self-regulation of learning can be an additional challenge for higher education students.

Table 1. Open university examples by establishment dates and estimated enrollment

University name	Location	Established	Enrollment
Allama Iqbal Open University	Pakistan	1974	1.4 million
Anadolu University Eskisehir	Turkey	1958	2 million
Bangladesh Open University	Bangladesh	1992	650,000
Dr. B R Ambedkar Open University	India	1982	700,000
Indira Gandhi National Open University	India	1985	4+ million
National Open University of Nigeria	Nigeria	2002	500,000
Open University of China	China	2012	2.7 million
Payame Noor University of Tehran	Iran	1987	800,000
South Korea National Open University	South Korea	1972	212,000
The Open University of the United Kingdom	England	1969	200,000
Universitas Terbuka of Jakarta	Indonesia	1984	300,000
University of South Africa or UNISA	South Africa	1946	320,000

Whether it is the open university model of distance learning or MOOCs, the models of distance education come with promising

possibilities and critical challenges. One such challenge—and a common critique of these models of distance learning—is the teacher-learner relationship disconnect that students often report (Cagiltay, et al., 2020, Durden, 2020). Researchers found that when it comes to distance education, the students often report missing out on being part of a community of learners as well as the affirmation of being recognised as an individual learner by the course professor (Alonso-Mencía, et al., 2020; Durden, 2020). As the open university and MOOCs become more popular and established, more research is needed on how both forms of distance education respond to these challenges.

Theme 2: Distance Learning in Higher Education in Southeast Asia

The second research question for this literature review centres around ways that distance learning and ICT are being utilised in higher education in Southeast Asia countries. The growth and demand for higher education continues to outpace many other areas of the globe. Calderon (2012) explained, “By 2035, three Southeast Asian countries—Indonesia, Malaysia, and Vietnam—will enroll some of the world’s largest number of university students. These ASEAN countries will rank in the World’s Top 20, in terms of the number of university student enrollment” (para. 11). As explained earlier, ASEAN stands for the Association of Southeast Asian Nations and was established in 1967 with the motto “One Vision, One Identity, One Community” (ASEAN, 2020, p. ii). Currently, there are 10 member countries that comprise ASEAN: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam. ASEAN countries represent one of the fastest growing regions in the world with an annual population increase of 1.3% between 1980 and 2019 (ASEAN, 2020). Higher education is alluded to in the fourth agreement of the ASEAN Declaration as the countries in this region agreed to assist one another with forms of training and research facilities for educational and technical purposes.

The ASEAN Way

Academics and government leaders have made note of the unified features of ASEAN in light of being a culturally, linguistically, and religiously diverse region (Bhandari & Lefébure, 2015; Koh, 2007). Economic growth or what Koh (2007) coins “the cultural economy” (p. 182) of ASEAN is one of the predominant unifying features and seems to be the adhesive that keeps the countries together. ASEAN is also a product of politically motivated cooperation in light of being close neighbors of the Asian economic giants like China and India. The cooperation and unity among the countries in Southeast Asia has been nicknamed the ASEAN Way (Chandari & Lefébure, 2015; Koh, 2007). The ASEAN Way also impacts how many countries in Southeast Asia face the challenges in massification of higher education for their citizens.

ASEAN Studies Program

Bhandari (2019) asserts that the economic growth in many rapidly developing Asian economies—like the ASEAN countries—is closely connected to advanced skills, research production, and a rising demand for higher education. In keeping with the ASEAN Way, many Southeast Asia countries find that it is better to cooperate as they all work to address a common challenge related to providing for the massification of higher education without sacrificing the quality of that education. Many open universities in ASEAN, for instance, belong to the Asian Association of Open Universities (AAOU). The AAOU affiliated universities have developed a model of curricular collaboration—using ICT and open-source technology supported platforms—to develop the curriculum and learning modules for an ASEAN Studies program (Bandalaria, 2018). Table 2 shows the open universities in the ASEAN countries that have collaborated to develop this ASEAN studies program.

As Table 2 illustrates, many of the ASEAN open universities are collaborating together to deliver a curricula that is regionally focused. In terms of ICT, the open universities in this network use the Open and Distance e-Learning or ODeL model (Bandalaria, 2018). The ODeL model is framed on the features and pedagogy of distance education, eLearning,

and open access. Bandalaria (2018) explains that the features include: (1) Mostly asynchronous delivery of instruction that does not require in-person, face-to-face delivery of class content; (2) guided independent study using a curricula designed by course instructor or professor; (3) curricula includes an activity pacing schedule, course guide, and course materials with information to support the needs of the learner; (4) a common, open source learning management system (LMS) or platform; (5) web-based collaborative and social communication tools; and (6) final exams that are either delivered at designated testing centres or provided online through the LMS. Situated in these common features of the ODeL model, the ASEAN open universities listed in Table 2 have streamlined and delivered the ASEAN Studies Program to a plethora of students across a vast geographic region. One of the outcomes of these collaborative efforts has been the development of a Graduate Certificate Program in ASEAN Studies and Master in ASEAN Studies at the Philippines Open University. Additionally, Bandalaria (2018) reports that several of the ASEAN open universities have participated in a AAOU initiative to develop dedicated Asian MOOCs that support the open access, distance learning, and the collaborative efforts towards the massification of higher education in the Southeast Asia region.

Table 2. ASEAN studies program open university collaborators

University name	Location	Enrollment
Hanoi Open University	Vietnam	60,000
Open University of Malaysia	Malaysia	80,000
Philippines Open University	Philippines	5,000
Sukhothai Thammathirat Open University	Thailand	65,000
Universitas Terbuka of Jakarta	Indonesia	300,000

Looking to the Future

It is noticeable that the country of Singapore is missing on the list of open universities in Table 2. Arguably the most prosperous ASEAN country, Singapore does have open universities including the Singapore University of Social Science, which is affiliated with the AAOU. When it

comes to higher education, however, Singapore is positioning itself as a global leader in higher education rather than just an education leader in the Southeast Asia region (Songkaeo & Yeong, 2016). In this regard, Singapore provides an interesting case study for the internationalisation of higher education. Songkaeo and Yeong (2016) explain how universities in Singapore have created partnerships with top-level universities around the world like Carnegie Mellon University, King's College London, New York University, and Oxford University. These international collaborations mean greater opportunities for the internationalisation of campuses in Singapore as well as an increase in student mobility opportunities for Singapore's tertiary level students. The International Association of Universities (2016) also reports that Singapore is the wealthiest country in the ASEAN and their universities are well-funded and supported. As it relates to higher education, more research is needed on the role that Singapore's universities might play in supporting the distance learning efforts in the Southeast Asian region.

Other ASEAN countries—like Malaysia, Thailand, and Vietnam—are implementing innovative schemes to support higher education. For example, Songkaeo and Yeong (2016) found that the Government of Malaysia has recently put an emphasis on developing partnerships with Malaysian universities and universities in Europe, the United Kingdom, and the United States. Yet, such partnerships take time to mature and this effort is more about increasing the international profile of Malaysia's universities rather than a focus on collaborating with ASEAN universities. More than half of the ASEAN countries—including universities in Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam—have developed MOOCs to support the massification of higher education. For example, Indonesia has a MOOC called IndonesiaX, which was developed by a partnership of seven Indonesia universities and supported using the Open edX MOOC platform. Bandalaria (2018) explains that IndonesiaX was launched in 2015 and now has more than 45,000 course registrations each year.

Thailand also developed a collaborative MOOC project—called ThaiMOOC—with several Thai universities. Nasongkhia, et al. (2015)

reported how ThaiMOOC is supported by the Thailand Ministry of Education, which funds faculty members to create and implement the open course content to support ThaiMOOC. When it comes to distance learning and the massification of higher education in ASEAN, most countries are in a stage of translating their visions for the future into action (The Head Foundation, 2019). Initiatives like the collaboration among the universities in the region as well as innovations like MOOCs are ways of making progress. That being said, the lesser developed countries in ASEAN—countries like Cambodia, Laos, and Myanmar—struggle with providing a basic infrastructure for higher education (Songkaeo & Yeong, 2016; The Head Foundation, 2019). The massification of higher education in the ASEAN region seems to hinge on the use of ICT for distance education and open universities. Likewise, supporting the ASEAN Way through collaboration among the ASEAN universities is another part of the vision for sustaining the promising economic future of Southeast Asia.

DISCUSSION

Songkaeo and Yeong (2016) wisely summarize the challenges of higher education in the ASEAN region as challenges of “how the massification of higher education can happen without compromising quality education” (p. 16). As I briefly discussed in the chapter’s introduction, Jayant Pandurang Naik (1975) coined the term, “elusive triangle” (p. 3), as a way to describe the difficulty of assuring access to a high quality education system to the largest quantity of learners possible. The elusive triangle relates to access, equity, and quality learning. The challenges in ASEAN higher education are similar: How to ensure an equitable distribution of quality educational resources while at the same time pursue a massification of higher education for all young people in ASEAN? Krishna Kumar (1991) might answer this question by pointing to how each country’s higher education system has a mission to “equip individuals with knowledge and skills that are appropriate to the tasks generated by the economy and supported by politics and the culture” (p.

69). This means that open universities and distance learning innovations in higher education are not developed in a vacuum.

Rather, higher education systems reflect the cultural values, economic goals, historical background, linguistic identities, political pursuits, religious beliefs (or plurality of religions), technological achievements, and the social norms of the society where the higher education system is situated. What is interesting about higher education in the ASEAN region, is that countries in ASEAN have agreed to unify around the collective idea of the ASEAN Way for potentially stronger educational and economic outcomes across the region. Higher education is constructed in service to knowledge production and the economic development of the larger community. Remarkably, for countries in Southeast Asia the larger community is more than just sovereign entities, but, rather, encompasses the ASEAN region. In many ways, such collaboration seems to be common across many countries in Asia. The AAOU is an example of this collaboration among the open universities in Asia. In fact, there are about 50 universities that are full members of the AAOU representing 18 countries across the Asian and Sub-Asian continent. Much of the collaboration among universities in ASEAN is multilateral rather than bilateral. It is a collaboration, for example, among ASEAN countries and partner universities in Asia like China and Japan (Songkiao & Yeong, 2016; The Head Foundation, 2019). China's Tsinghua University, for example, developed a large and extensive MOOC platform with 11 million users, more than 500 partner universities, and over 1400 courses (Bandalaria, 2018). The partner universities include universities in the ASEAN region. Shah (2017) explains how the Tsinghua University MOOC is one of the fastest growing MOOCs in Asia.

Institutions of higher education in ASEAN countries also look to Asian countries like Japan to help collaborate and build a research infrastructure. Bandalaria (2018) reports on how Laos, Myanmar, Thailand, and Vietnam are collaborating with Japanese universities to develop research centres that are supported with ICT. Japan is a smart choice for such collaboration as they currently host a course consortium MOOC called the JMOOC. What is unique about JMOOC is that it has courses that are not only

offered by Japanese universities, but also courses by Japanese companies (Bandalaria, 2018). Participation in the JMOOC is a way for young people in the ASEAN region to develop their economic knowledge and skills.

IMPLICATIONS

In this chapter, I have utilised a literature review methodology to examine and report on distant learning in higher education in Asian countries. In particular, I focused on countries in the ASEAN region. Bhandari (2019) probes an interesting query about whether one of the unintended consequences of the massification of higher education in Asia is a “brain drain” (p. 6) and exit of the educated to places like Europe and the United States. There is evidence from China and India that such a “brain drain” could be a possible outcome. More research is needed into the correlations among student mobility and emigration as related to the increasing massification of higher education in ASEAN. Likewise, a future research agenda would also include comparative and international studies of the collaborations happening among the ASEAN countries with higher education institutions in Asian countries like China, India, Japan, and South Korea. Finally, future research studies are also needed to investigate the possibilities for public-private partnerships in the ASEAN region in relation to open education and the massification of higher education.

One compelling public-private partnership is the Connected Learning Initiative (CLIX) in India (Thirumali, et al., 2019). This UNESCO recognised and awarded initiative is a partnership among Tata Institute of Social Sciences (TISS), the Massachusetts Institute of Technology (MIT), and the Tata Trusts. CLIX adapts ICT and educational innovations to the Indian context and supported by a network of higher education institutions, private sector technology companies, public education systems, and teachers. CLIX offers a scalable and sustainable model of open education that improves the quality of education in English, mathematics, and the sciences through the hands-on uses of technology. While CLIX is primarily a professional development support for teachers; it provides a model for

public-private partnership that could be replicated in the ASEAN context. More research is needed in order to examine the possibilities and potential for replication.

CONCLUSION

The demand for higher education will continue to increase in the ASEAN region and throughout Asia. I conclude by linking this demand with the pursuit of human rights and with Global Equity (Authors, 2020). The Universal Declaration of Human Rights (UN, 1948) asserts that all persons have a right to access resources necessary to live a healthy, happy, and full life. Right now, higher education is one of those necessary resources. The Global Equity Theory (Authors, 2021) explains that education is a human right to nurture the well-being of humanity. Sen (2009) explains that well-being is the “realisation of full potential to be and to do” (p. 44). Higher education is part of the realisation of the full potential of ASEAN. It is why the countries in the ASEAN region unify under the banner of the ASEAN Way as they to prepare the region’s large population of young people for the knowledge and skills needed to support Southeast Asia’s growing economic development.

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Chapter 3

**DISTANCE EDUCATION FUTURES:
WHAT ARE THE FACTORS THAT WILL
AFFECT HOW DISTANCE EDUCATION
DEVELOPS IN THE FUTURE?**

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ABSTRACT

This chapter surveys some of the characteristics that may affect the future development of distance education. It suggests that the most important feature is the issue of student retention and dropout. Distance education appears to have graduation rates of about a quarter or less than those of conventional education-the 'distance education deficit.' This has negative consequences for three of the most important features of

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distance education namely—costs, sustainability and access. The chapter looks at how various developments in distance education would affect dropout and how retention might be improved. Finally, it argues that the main barrier affecting student retention is ultimately the attitudes of some of the members of the distance education community, which should be changed.

Keywords: distance education, retention, dropout, cost, access, sustainability

INTRODUCTION

‘Prediction is very Difficult, Especially if it’s about the Future’

- Niels Bohr - Physicist

Attempts to predict how distance education should develop in the future are likely to end in reputational damage. However, as Confucius perhaps said “If a man takes no thought about what is distant, he will find sorrow near at hand” or as Paulo Coelho did say “...keep your eyes open, concentrate and make sure you know exactly what it is you want. No one can hit their target with their eyes closed.” Therefore, we should at least try to guess what the main factors that will affect the future of distance education might be, and how current developments will depend on those factors. Then we can hope to be better prepared when the distance education future, whatever it is, actually arrives. And of course, there may be more than one future as different forms of distance education for different countries and systems develop.

METHODS

The method used in this chapter has been an extensive review of recent research and other publications in distance education, including the author’s own book ‘Supporting Students for Success in Online and Distance Education’.

FACTORS AFFECTING THE FUTURE OF DISTANCE EDUCATION

There seem to be four main factors in distance education that should be considered in any analysis of its future. They are cost, sustainability, access and retention. In the following subsections, we shall discuss them one by one.

Costs

The future for distance education in cost terms seems very bright. Clearly, distance education is generally much less expensive than conventional education for both governments, institutions and students themselves.

For Governments

Governments gain from distance education in several ways: if they subsidise it then the costs of a distance education institution, in both capital and running expenditure, are likely to be much lower than the costs of conventional institutions given the lack of the need to build expensive facilities for students and to engage higher numbers of staff to support them. If governments do not subsidise distance education to any extent, then they still gain since, unlike conventional students, many distance learners will continue to work in the economy whilst studying and will contribute to it, both in terms of Gross National Product (GNP) and through paying income taxes.

For Educational Institutions

Distance Educational institutions can also gain in cost terms. Where a conventional institution also offers a distance programme (in other words, it is a 'dual mode' institution) then Rumble (1992) has shown that the additional cost of providing the distance mode can be relatively small

compared to the conventional mode - the conventional mode subsidises the distance mode. Even a dedicated distance institution (a 'single-mode' institution) can find that without the overheads of students present on its campus the distance mode is much less expensive than its conventional neighbours.

For Students

Students clearly gain from studying at a distance. Generally, their fees are lower, and in particular they are usually able to continue working whilst studying. This is a huge financial advantage over conventional students—it is estimated that in the case of the UK Open University, the cost of its undergraduate degree to its students is only about a fifth of a conventional degree. This in turn means that the return on their educational investment—the extra income they acquire as a result of being a graduate divided by their investment to get that graduation—is correspondingly much higher. Contrary to what many people think, the introduction of e-learning does not affect these calculations to any great extent. Writers on costs involved in distance education generally agree that e-learning is not cheaper to any of the three players mentioned above (Rumble 2004).

Sustainability

It may seem surprising to see this term used in an educational setting. However, education is an energy-rich business, no more immune to the need to reduce global warming than any other industry. So, attempts have been made to estimate the relative energy consumption and CO₂ production of distance education versus conventional education. Given that students study largely at home and so do not contribute to any substantial extra energy demands, it is not surprising that both the CO₂ production and energy use in distance education is less than 20% of conventional education-see Figure 1.

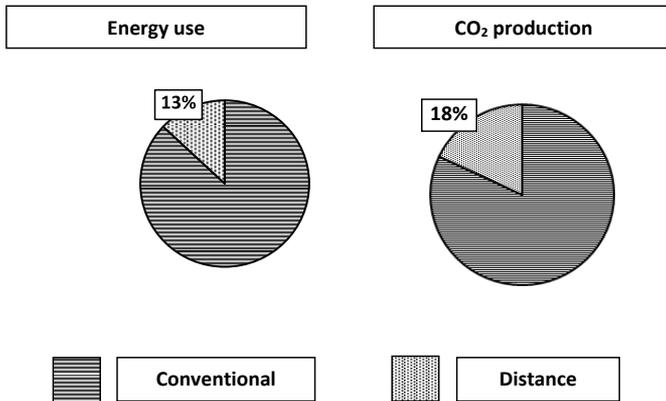


Figure 1. Energy and CO₂ production in Conventional and Distance Education compared (Simpson, 2013, after Roy et al, 2007).

This is despite the extra costs in distance education for print production and mailing materials from institutions to students and back again. Surprisingly, to many people, e-learning is not more sustainable than conventional education: the extra energy costs of computer and internet maintenance outweigh the energy savings on mailing costs.

Access

One of the great and immediate advantages of distance education originally, was the way it made educational opportunities available to a much wider range of people than conventional education. Students in remote communities, students unable to study full-time, students home-bound because of disability, impoverished students, and, particularly perhaps women, all benefitted from the ability to study at home in their own time without the need to travel to a fixed location. Even prison inmates could study. All anyone needed was an address.

That level of access must have contributed to the speedy growth of distance education in the last thirty years. It has probably been the fastest expanding area of education worldwide. However, there is a problem undermining this access success, one which some distance educators seem

to ignore. It is the growth in e-learning-only institutions. There is an increasing number of institutions whose offerings are now only accessible via the Internet such as the UK Open University. Such institutions are therefore excluding potential students who do not have internet access.

It is easy for the largely middle class staff in such an institution to assume that practically everyone has internet access, but even in a highly developed economy like the UK, this is not the case: nearly 20% of the UK population do not have broadband internet access at home. Whilst some will be able to use internet cafes, libraries and so on, it is not clear that such levels of access are enough to study an internet-only programme. And importantly, the lack of internet access is invariably concentrated in the poorest and most educationally disadvantaged part of the population, thus contributing to the phenomenon of ‘digital exclusion’—the marginalisation of that part of the population that does not have access to the world-wide web and its benefits.

If this is the case in a highly developed society, this exclusion is more marked in the developing societies such as those in Asia, Brazil and China where broadband internet access via computers may be restricted to just over 30% of their populations. It is even more marked in nations in Africa where the access is less than 10%. Of course, the invention of the ‘Smartphone’ is changing the access to the internet and it is thought that already more people access the internet from smartphones than from computers. However, it is not yet clear how that kind of access can be used for study.

‘Health Warning’

Finally, in the tradition of labeling the dangers of products like cigarettes there is an immensely important health warning or caveat; arguments about costs, sustainability and access are acutely affected by a hidden rock in the path of the distance education ship - it is the rock of student retention and dropout, as we shall see in the next section.

Student Retention and Dropout

Whilst it is difficult to acquire clear figures for student dropout rates from distance education, there seems little doubt that they are much higher than in conventional education. There are different ways that institutions measure dropout rates, but since the benefits of distance education mostly accrue after graduation, the best analysis is probably to look at the overall graduation rates - see Figure 2.

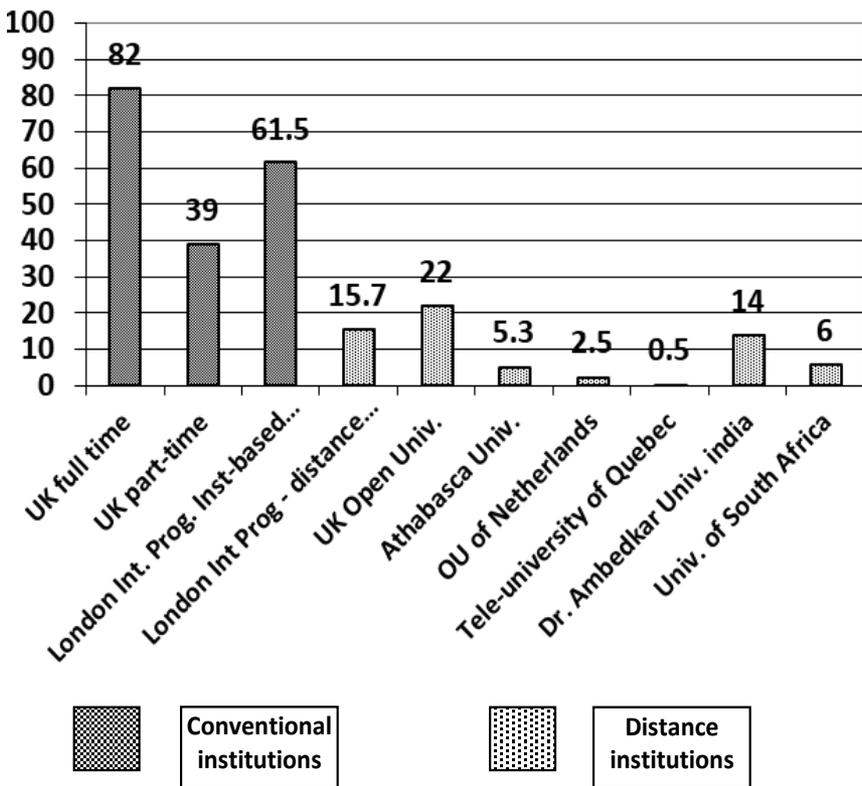


Figure 2. Graduation rates across a variety of higher education institutions (Simpson, 2013).

It can be seen that the graduation rates for the distance institutions in this graph appear to vary between 0-20% compared with more than 80% for full-time education in the UK. This particular selection of rates is simply from those which are available in the literature. They are all public institutions: it is of course possible that there are distance institutions doing much better, perhaps amongst the private institutions. However, rumors suggest that the private institutions do no better and often worse - one of the largest private providers in the USA, the University of Phoenix, is thought to have only a 4% graduation rate on its distance programmes (some commentators refer to such institutions as ‘failure factories’).

The rates for London International Programmes are particularly interesting as identical courses are presented in two modes—with face-to-face support (institution-based students) and correspondence only (distance students). So, direct comparisons are possible, and it is clear from the graph that the graduation rates in distance mode are only about a quarter of that of the face-to-face students, 15.7% versus 61.5% respectively. This is close to the relationship between distance students at the UK Open University and full-time UK students - 22% and 82%. Perhaps, the phenomenon that distance education has up to one quarter the graduation rate of conventional education relationship is a worldwide characteristic of distance education—it might be called the ‘distance education deficit.’

DISTANCE EDUCATION DROPOUT: THE EFFECTS

Some commentators are very relaxed about distance education dropout. As one researcher suggested, “High program dropout rates may not be educationally a bad thing for distance education. After all, the expense to students and society is minimal even if the water is cold” (Powell, 2009). However, there are various factors which suggest that this view is far too complacent. There is evidence that dropout does long term damage to students and possibly to institutions themselves.

Damage to Students

There is very little research into what happens to students who drop out of distance education. It is a little curious that this should be so since dropped out students are clearly its principle product. However, this is not a particular criticism of distance education researchers, as there appears to be very little research into dropped out students from conventional education. In the UK, there is some evidence from Bynner (2001) who, whilst looking at the benefits of conventional higher education, also found some detriments of dropping out from it. He found that dropped out students had a higher probability of depression, unemployment and - for women - suffering violence from their partners, than either graduates - which is not surprising - but also a higher probability than people who had never entered the UK university system at all - see Figure 3.

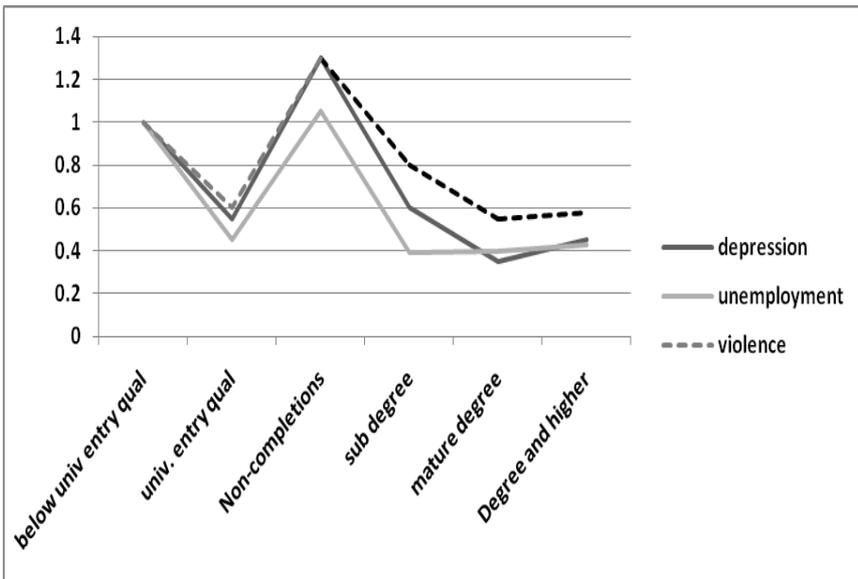


Figure 3. Probability of Depression, Unemployment and for women experiencing Violence from Their Partners, according to Educational Experience (after Bynner, 2001).

Some distance educators might take comfort from the thought that distance students might be less integrated with their studies and that the consequences of dropping out are less important. However, there seems to be little evidence to substantiate that opinion. In addition to these possible results of dropping out, there is a more certain one: students who pay their fees or take out loans to pay them, will find that after dropout they are in debt, but do not have an increase in income as a graduate to repay that debt. The result is a general increase in indebtedness in the population at a time when debt in many societies has become an issue of increasing concern.

Reputational Damage to Distance Education Institutions

Imagine that you are stepping onto a bus for a long journey and you are about to pay the fare. The driver says to you, “You do realize that there is a 80% chance that this bus will fall apart before it gets to its destination?” Would you pay and continue to board? Possibly not. Yet, that is the position of the many thousands of distance students who start courses every year. So far, we have no evidence that that is affecting the reputation of distance institutions but in an increasingly competitive educational environment, this may not continue to be the case. Potential students may vote with their fees and enroll at institutions which can offer them a better chance of success. In addition, where governments subsidise distance education to some extent, in order to increase the proportion of graduates in society, they may begin to ask if their money is being used in the most effective way. Would you invest in a factory, which was only working at 20% efficiency?

Effects on Costs, Sustainability and Access – the ‘Health Warning’

Other consequences of the high levels of dropout in distance education are the effects on costs, sustainability and access.

- *Costs* - whilst, as previously discussed, the cost of a distance education degree is much lower than a conventional degree, the risk of a student losing their investment in time and money through dropping out are correspondingly much higher.
- *Sustainability* - similarly if a distance institution is producing a much lower proportion of graduates than conventional institutions, then its sustainability relative to those institutions is also much reduced. For example, given the UKOU’s graduation rate is around 20% that more or less cancels out its sustainability advantage.
- *Access* - whilst distance institutions can still claim higher levels of access for its students, that access is of little help to students if the open door to their education is often a revolving door that whisks them round and out again, with nothing to show for their experience, except enhanced chances of increased depression and indebtedness.

IS THE ‘DISTANCE EDUCATION DEFICIT’ AN INTRINSIC AND UNAVOIDABLE CHARACTERISTIC OF DISTANCE EDUCATION?

As suggested earlier, there appears to be a difference between the graduation rates in conventional education and distance education with distance education rates being a quarter or less of conventional education. This raises two questions:

- Why does this deficit exist?
- And is it inherent and unavoidable?

That is, will the deficit always exist whatever we do?

Why Does the Distance Education Deficit Exist?

There appears to be little attention paid to this question in the literature of distance education. This is generally consonant with the general level of attention paid to the general problems of student dropout in distance education research. One estimate is that at least in North American and European research reports, student dropout and retention appear as the main focuses in less than a fifth of the articles that are published in distance education journals. One answer must relate to the fact that most distance students are studying part-time and juggling jobs, families and other commitments alongside their studies. Yet Figure 1 shows that UK part-time students, who are often doing those things, still have a graduation rate of nearly twice that of distance students at the UK Open University, so the deficit is not explained by just that factor.

Will the Distance Education Deficit always Exist?

Perhaps the answer to this question is yes-to some extent. Studying at a distance will probably always be a poor relation of conventional face-to-face study. However, it is hard to believe that the deficit will always exist and that distance education will always have around a quarter of conventional graduation rates or less. I argue that it must be possible to make a difference to student dropout, so will one or more of the recent largely technological developments make a difference? Alternatively, is there an existing strategy which will increase students' success that we are overlooking?

DISCUSSION

New Developments in Distance Education-Will They Make a Difference to Student Dropout?

There are many new developments in distance education, many of which come under the general heading of ‘e-learning’ (using the term to cover mobile learning and blended learning). However, how will the new developments in distance education make a difference to student drop out?

Can E-Learning Reduce Student Drop Out?

In theory, e-learning should overcome the problems of student isolation and transactional distance. After all, in e-learning, a student’s institution, tutor and fellow students are only as far away as his or her computer or smartphone. Yet, it seems to be something of a conundrum in that, so far, a search of the research literature finds little evidence that the introduction of e-learning has made a substantial difference to student dropout rates. For example, whilst the UK Open University has become almost entirely an e-learning institution since 2000, its graduation rates have apparently continued to drop.

One reason for this is that the very term ‘e-learning’ is a misnomer. What distance institutions are doing in most cases is ‘*e-teaching*’—using the internet to teach students using such things as podcasts, video clips, blogs, and so on. ‘E-learning’ is what we hope students do as a result of our e-teaching. It can be a mistake to confuse hoped-for ends (learning) with means to that end (teaching). (This may be what philosophers call a ‘category error’ - when one attributes a property to a thing that it cannot possibly have).

The difference is important because as Paul Ramsden (2003) says, “No teacher can ever be certain that their teaching will cause a learner to learn.” Merely putting more and more sophisticated e-teaching structures on an institution’s Virtual Learning Environment may not enhance student retention. After all, the first thing a student does when they lose motivation is to stop logging onto their VLE.

One thing that might have a more direct effect on student retention is the use of computer forums, especially if tutor-moderated. However, it is difficult to find clear evidence of anyone increasing student retention by using forums. Admittedly, finding such evidence would be a difficult research challenge, but given the amount of effort that has gone into using such forums, it is surprising that there is apparently little evaluation of their effects.

Finally, perhaps it is worth noting that computers can also sometimes be a barrier to learning- there are many problems that still occur daily with computer use - spam, viruses, crashes, faulty software, router connections and so on.

Other Developments in Distance Education

There are other developments in distance learning such as the use of smart phones, tablets, e-books, MOOCS, learning analytics and artificial intelligence. Will any of these have any effect on student retention and dropout?

Smartphone, Tablets and E-books

Many students now have access to smart phones, so it may be that these could be used as a medium for student support. There are also various apps which may support more effective study such as study organisers or flash card systems. Tablets and e-books may also represent some kind of advances in terms of student retention if used intelligently, perhaps by building in self-assessment activities and motivational materials. However, like other e-learning systems, these can be costly and any institution must look at what gives them the best value in terms of student retention. It may for example be more cost-effective to use low-tech systems such as phone support to decrease student dropout.

MOOCS

Massive Open Online Courses are currently the focus of much distance education across the world. These are online courses open to anyone and can have enrolment of several thousand if not hundreds of thousands of

students. There is generally no support other than what is in the course materials and all assessment is computer-based.

Yet such courses are not the solution to dropout. Generally, their graduation rates are often 10% or less, and there is some doubt in any case as to the value of qualifications gained purely through computer-marked assessments with inadequate identity checks. Their proponents argue that since enrolments are so great, the overall number of graduating learners is still large enough to justify their existence. This feels a little like the arguments of the generals of the First World War who thought that victory could be achieved by throwing large numbers of soldiers across no-man's land and against the enemy's machine-guns, in the hope a few would get through.

In addition, there are questions of how MOOCS are paid for: whilst their industrial scale makes the cost per student low, it remains to be seen how many students will pay any cost for a 10% chance of a qualification whose resale value is in any case in doubt. In reality, the enrolment in MOOCS is more than 80% from the people who already have a degree, suggesting that they are used for occasional updating rather than as an accessible route into higher education.

'Learning Analytics' or Educational Data Mining

Learning Analytics is a new field and is concerned with the collection and analysis of data about learners. The aim is to understand and optimise the learning environments for those learners. A relatively simple retention-focused example is used in Simpson (2006) who used a binomial regression analysis of previous students' results to attach a 'predicted probability of success' factor to new incoming students. This enabled the limited support resources to be focused on students with a low predicted probability of success and a 5% increase in retention resulted. However, essentially learning analytics is an area with promise for retention but no real findings as to dropout yet.

Artificial Intelligence (AI)

AI is another new field in education and is essentially the use of very sophisticated computer programs to simulate human intelligence. Such a program could, in theory, answer students' queries and take proactive action where it detects that a student is having learning issues. This may be one of the most useful developments in supporting students for success, but the current programs remain relatively primitive and will be expensive to develop to a state where they might be effective.

How Can the Retention Rate in Distance Education be Increased?

I believe that retention in distance education can be increased, but it will occur less through technological advances and more through human skills – particularly the ability to 'personalise' learning for students. *A student will learn best when they have someone who cares that they learn.* The task of a distance educator then becomes finding the most effective ways of achieving that personalisation in a mass system. That means enhancing the communication between institutions and students. However what shape should that communication take? One possible answer is given by Anderson (2006) who believed that student dropout is largely due to one factor - loss of the motivation to learn. In a presentation, he said: "The best predictor of student retention is motivation. Retention services need to clarify and build on motivation and address motivation-reducing issues. Most students drop out because of reduced motivation."

Anderson also noted what he saw as a particularly important characteristic of that motivation building by institutions- it should be proactive. In other words, the institution should reach out to its students. As he further wrote: "Student self-referral does not work as a mode of promoting persistence. Students who need services the most refer themselves the least. Effective retention services take the initiative in outreach and timely interventions with those students."

Therefore, in order to increase student retention in distance education, we may need a system that is both proactive and personal and aimed at students' learning motivation, or what we might call 'personal proactive

motivational support'. The challenge then turns out to be using technology to develop that personal proactive motivational support.

However, there are also barriers to increasing retention in distance education, some of which are to do with personal characteristics of the people working in distance education.

The Barriers to Increasing Retention in Distance Education

Whilst the strategies to increase retention are mainly human, the main barriers to enhancing retention in distance education are also human. They are the attitudes to student retention within the distance education community. There are three main views that people can display about student dropout:

- The 'Darwinistas': Darwinistas believe in 'survival of the fittest'. They believe that students drop out because they are not intelligent enough, unmotivated or lazy. Therefore, it is their job to weed out the unfit and keep standards as high as possible.
- The 'Fatalistas': Fatalistas believe that students drop out for reasons beyond their control. Therefore, they see their job as teaching as best they can, but that students are doomed to pass or fail and there is not much they can do about it.
- The 'Retentioneers': Retentioneers believe that students most often dropout because of lack of proactive support. Therefore, they see their job as proactively enhancing students' learning motivation and helping them become as successful as they can be.

It will only be possible to enhance retention when Darwinistas and Fatalistas become Retentioneers.

CONCLUSION

The future of distance education will depend on how it deals with the problem of its student dropout. That dropout remains a fundamental

characteristic of distance education with consequences in costs, sustainability and access, and subsequent issues for students, institutions and governments. So far, it is difficult to see what difference recent advances in the technology of distance education are making to this. Ultimately, the challenge of increasing student retention in distance education will be human rather than technological; it will involve finding ways of personalising learning through proactive and motivational contact with students. It will also be a question of changing some people's attitudes to student retention from 'Darwinistas' and 'Fatalistas' to 'Retentioneers'. Neither are easy tasks but both are well worth undertaking. Otherwise, the future for distance education will remain cloudy at best.

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Chapter 4

**AN EVALUATION OF THE COMPONENTS OF
ODL PROCESSES, SMART TECHNOLOGIES
AND TECHNOLOGICAL SINGULARITY**

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ABSTRACT

Open and Distance Learning (ODL) is a set of processes that begin with the realisation of certain stages between the service providers and the learners. In the ODL system factors like the learner not being separated from the services provided, increasing the service quality of the institution, creating personalised learning environments, benefiting the learners from different services according to their characteristics, providing support and socialisation opportunities and enhancing sustainability of the learners play a critical role. During the COVID-19 pandemic, it was important to organise and manage ODL services according to the emergent situation. In this chapter, the components of

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the different processes in institutions that offer ODL programmes are discussed and suggestions are made for the application of Smart technologies and artificial intelligence that can be employed in these processes. Besides, in line with the technological developments and the digital transformation of the institution, an evaluation of the different processes of the ODL system has been made in the context of the upcoming Technological singularity.

INTRODUCTION

Open and Distance Learning (ODL) enhances communication between the students and institution, helps to understand the idea of active learning, increases cooperation among the students, helps to obtain live feedback, differentiates ways and abilities of learning and obtains higher expectations from the students (King, 2002). However, the communication between the students and institutions takes place in terms of different processes. The outbreak of the Corona virus (COVID-19) pandemic caused the need to offer distance education at all levels across the whole world. This also revealed the need to raise awareness among the educational institutions, educators, learners and the people in society regarding distance education which is actually supportive education. But, real distance education also signifies a set of systems that include many different services from management of the institutions to implementation of the institutional policies and so on.

The digital transformation which accelerated with the outbreak of the COVID-19 pandemic ensured that the big data required for Technological singularity is rapidly obtained. The data of individuals in several areas from health to education, from e-Governance to shopping began to be stored. The data obtained with social networks started to be processed with artificial intelligence, software and block chain applications. This process revealed the need to review and prepare digitisation in different fields, including in Education, during a crisis period.

THEORETICAL PERSPECTIVES

Technological Singularity

Technological singularity is defined as the hypothetical point where artificial intelligence will surpass human intelligence in future and will radically change human civilization and human nature (Wikipedia, 2018). According to the futurists (Vinge, 1993; Kurzweil, 2005; Shanahan, 2015; Eden, More, Soraker, Steinhart, 2015; Goertzel, 2017; Potapov, 2018; Yampolskiy, 2018), this will be realised soon. Technological singularity which is said to be the final product of the development process of artificial intelligence, will inevitably affect the ODL systems that would reach individuals mostly through technology.

METHODS

In this chapter, the Case study method has been used. The case is defined as a phenomenon observed at a single point in a certain period (Gerring, 2007) or a phenomenon always occurring in a limited context (Miles & Huberman, 1994). A Case study is usually conducted by collecting systematic information about how a restricted system works, how an in-depth longitudinal analysis of that system is to be made and how it functions in the real environment can be outlined (Chmiliar, 2010; Davey, 1990). While collecting data in a Case study; documents, archive records can be examined; interviews can be conducted; or data can be collected either directly or through observing the participants (Yin, 1984).

In this chapter, answers to questions like—‘Which processes mostly apply to the ODL system?’ and ‘Which components play a role in these processes?’ are sought. The researchers, who have at least 20 years of experience in the field of ODL, have revealed their perceptions about the current processes of the ODL systems by using the data they obtained in the field. In this chapter, the various processes of the ODL were sought to

be determined, the existing systems are evaluated and an evaluation of the paradigm shift from human resources to new technological interventions in the field of education has been made.

Moreover, in this chapter, the components of the processes in institutions that offer programmes through the ODL mode are discussed and suggestions are made for the application of smart technologies and artificial intelligence that can be employed in these processes. Besides, in line with the developing technology as well as the processes of digital transformation, an evaluation of the ODL systems has been made in the context of the upcoming Technological singularity.

TECHNOLOGICAL SINGULARITY AND ODL

The process of transition to Technological singularity, defined as the hypothetical point where artificial intelligence will surpass human intelligence and radically change human life (Uğur, 2019), has accelerated with the emergence of COVID-19 pandemic. People stayed inside their homes in order to avoid being infected with the virus and benefited from the application of communication technologies in several ways. This enabled the big data needed in the transition to Technological singularity faster than anticipated. During this process, the support activities for distance education, which were passed as an urgent crisis management strategy for formal education all over the world and content presentation with education technologies for every stage of education had led to the collection of big data in this field like never before.

So, with the Technological singularity, human beings will enter a new phase and they will carry artificial intelligence to the level of their intelligence and perhaps even further. In such a period, it is important that human beings will not only upload all the information they have accumulated so far in computer servers but also they will transfer information to other human beings in some way or the other. So, with the rapid advancement in technology and rapid digital transformation of the society, future developments may focus on how artificial intelligence

would develop iteratively and even succeed in this challenging area (Yampolskiy, 2018). However, the following are some of the challenges that will have to be met in this regard.

- Uninterrupted workability (taking breaks, sleep, occupation, etc.)
- Omniscience (complete and interdisciplinary knowledge)
- Higher speed and precision (brain-processor, human memory-computer memory)
- Communication speed between systems (chemical-electrical)
- Repeatability (intelligent software can be copied)
- Editability (unlike the source DNA, the code can be changed quickly)
- Optimal rationality (if it is not based on heuristic methods) (Muehlhauser & Salamon, 2012)
- Enhanced communication (ability to share complex concepts with cognitive representations)
- New cognitive modalities (sensors for source code)
- Low level of the analytical ability equipment (e.g., individual recordings), and
- Adding hardware (the ability to add new memory, processors, etc. (Yudkowsky, 2012)

It is therefore important to be ready for the Technological singularity that will come with artificial intelligence developed in terms of the above mentioned challenges. For ODL to be prepared for the Technological singularity, as in many other fields, the processes and the technologies that are employed in ODL must be determined and structured appropriately.

ODL PROCESSES

When the literature on ODL had been examined, it was found that many different dimensions and services are actually interconnected. As the services are provided through different processes, the processes can be

evaluated in two ways. For example, when the programme design and development process in case of an ODL programme belongs only to the service provider, the assessment and evaluation process affects both the service provider and the service receiver. The ODL processes therefore can be handled separately for the institution providing the services and the beneficiaries receiving the services. An ODL institution can consider the following processes as outlined in Figure 1.

Besides the processes of the institutions as mentioned in Figure 1, there are also some sub-processes as shown below.

- Programme development process
- Registration and certification processes
- Content creation and production process
 - Book writing, design and publishing process
 - Electronic equipment design and production process
- Content presentation, publication and management process
 - Learning Management System (LMS)
 - Content Management System
 - Virtual classes/Live Courses/Interactive materials
- Performance Tracking Process
- Measurement and Assessment/Exam Process
- Communication and Support processes
 - Error and Feedback collection process
 - Change planning and application processes in accordance with feedbacks
 - Support process for those assigned in the system and for learners
- Audit, Quality and Accreditation process

In these processes, hardware needs arise along with the need for human resources. While the data communication infrastructure provides the environment for the training application to run, the hardware components meet the computing power required for the system (Demir, 2014), Internet connection, Firewall-Switches-Backup Hardware,

Workstations, Data processing centre, Studios, Offices, etc. become part of a production centre. The ODL processes for individuals or groups benefiting from the services can be discussed under four main titles. These are given in Figure 2 below.



Figure 1. Processes of the Institutions.



Figure 2. Processes for Learners.

The sub processes under the processes for learners can be outlined as the following:

- Registration and certification process
 - Course selection/payment/book, password, ID purchases
- The Learning Process
 - System recognition and registration
 - Content tracking
 - Participation in classes (virtual classroom, discussion forum, class activities, social activities, etc.)
 - Use of services
- Communication and Support Process
 - Help & Support
 - Socialisation and belonging
- Measurement and Assessment Process

PROGRAMME DEVELOPMENT PROCESS

ODL consists of a combination of programmes, management, human resources, physical facilities and equipment, finance, support services, infrastructure, collaboration with relevant institutions, learning-teaching processes, learner/student and programme-specific aspects (Alkan, 1998; Özyaygen, 2000). From this perspective, it can be stated that ODL can be considered within a system approach. However, the following questions will need to be answered while creating an ODL structure (Demir, 2014).

- In which field will training be provided?
- Access to the learning environment will be made through an infrastructure consisting of which sub-components and LMS?
- Which courses will be taught with what kind of content design?
- What type of course materials will be there?
- What will the form of the training be (synchronous/asynchronous)?
- How will simultaneous access be?

- What are the multimedia requirements for learning content?
- By what method, will the assessment and evaluation phase of the learning process be carried out?

The answers to these questions will help in determining the content, software, and hardware to be developed for an ODL programme, and the quality of the services provided by data analysis and communication infrastructure (Demir, 2014). Besides, determining the components related to the processes in which these services are offered will further help in deciding the needs of a planned ODL programme.

Willis (1992) defines the distance education programme development process as design, development, evaluation and revision. Rubinstein (2002), like Willis, says that programme development should have analysis, programme design, development and execution processes. University of Idaho (2002) defined this process like the following:

- At the design stage—analysis of the need for the programme and determining the needs, analysis of the target audience and determination of programme goals and outputs,
- In the development stage—creating a draft of content, reviewing the existing equipments, organising and developing the contents, selecting/developing tools and methods,
- In the evaluation stage—reviewing objectives outputs, developing an evaluation strategy, collecting and evaluating data, and finally,
- In the editing stage—the development and implementation of the regulatory plan should take place (Türkoğlu, 2003).

To identify the learning goals for the design and development of the ODL programmes and prepare contents in line with these goals, Moore (1989) stated in his theory of interaction for learners and trainers that the student-teacher, student-student and student-content interactions should be provided. Interaction lies at the heart of the learning-teaching processes. However, in distance education, four types of interactions are generally mentioned:

- learner-instructor
- learner-learner
- learner-content, and
- learner-interface (Moore & Kearsley, 1991).

Besides, the measurement and evaluation, the production and provision of educational media and tools for students appear as a requirement (Reznicek, 2002). Başaran and Tulu (2002) mentioned the following issues to be considered while developing an internet-based education application for students:

- Establishing strategic objectives
- Institutionalisation of course and programme selection
- The suitability of the courses to be offered online
- The personal assignment of at least one faculty member for each course
- Developing the courses according to the principles of programme development and their evaluation by experts
- Integrity and consistency in the presentation of the courses and the design of the visuals
- Each course has a cover, course content, information, course materials, supplementary course, discussion group, student lists/notes, homework/exercises and frequently asked questions pages
- Accepting and approving the developed academic programme by carefully evaluating the results it generates.

Besides the above points, there is a need for support and feedback system that includes management, planning and financing, student registration and classroom activities (Villanueva, 2003). However, considering the components involved in the development of an ODL programme, it needs mentioning that the human resources component in particular plays an active role.

REGISTRATION AND CERTIFICATION PROCESS

Students' admission and examination in ODL programmes in Turkey is carried out by the Student Selection and Placement Centre (SSPC) which prepares and conducts exams to admit students to higher education institutions within the framework of the principles determined by the Higher Education Council established by Articles 10 and 45 of the Higher Education Law No. 2547. The SSPC also evaluates the students according to the principles determined by the Council of Higher Education and ensures that the student-candidates are placed in higher education institutions and Organisation. The SSPC had been established as a public legal entity, with administrative and financial autonomy, with a special budget 'related' to the Council of Higher Education headquartered in Ankara, to fulfill the Duties given by the Law and other relevant legislation and to exercise its powers (OSYM, 2017).

The registration procedures of students, who are placed in the ODL programmes based on the points they obtained in the exams conducted by SSPC, are carried out on the dates determined by the universities. In this process, the following transactions are generally carried out by the institution:

- Activating the student registration system by the data processing unit.
- Setting up payment plans with the contracted bank.
- Activating automation accounts for students who receive approval from the registration system by creating student automation systems.
- Transferring the information of candidates who have completed the registration process to the LMS.
- Opening the contents of the courses that students are responsible for/have selected by defining them in the LMS.
- Delivery of materials such as passwords, identification cards to them through offices.

In light of the above mentioned points, the components of the registration process are given in the Figure 3.

After the end of the registration process, the monitoring process of the services and learning activities that the institution will offer to its registered students during their period of education begins. A variety of course materials can be offered for the courses in the programmes that appeal to different learning strategies, learning styles and/or learning habits. Besides, diversity can be provided based on the needs of the learners with disabilities. For example, materials such as textbooks, book summary, leaf test, mock test, question-answer narration, audio book, audio summary, unit narration and summary videos, animation videos, games, etc. can be prepared. The production processes of these course materials can be considered separately.

When the registration process is examined by a student-candidate; he/she can complete the registration form on the internet and view their assigned courses during this process. They make the bank payment according to the payment information. If requested, they prepare the necessary documents and deliver them to the office. Although they may differ from institutions to institutions, the documents generally requested are:

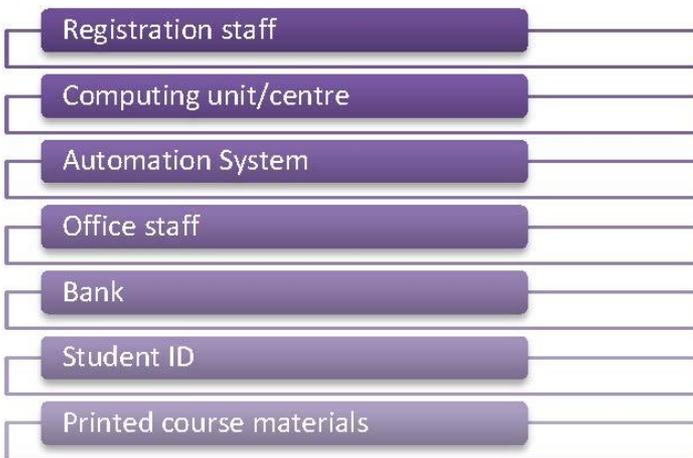


Figure 3. Components of the Registration process.

- Internet Application Document
- Student Information Form
- Registration Information Inquiry Results
- Certificate of Education
- Military Status Document

The students who complete their documents and procedures can go to their offices and get their textbooks. After the new registration to the institutions, it is necessary to renew the registration periodically until graduation. Unlike new registrations, in the renewal of registration procedures, students have the right to choose the courses they want to take.

In some institutions, a student determines his/her username and password to avail online facilities. In other institutions, students' accounts are activated in the LMS, where they can access electronic contents with the username and password given during the registration. In this regard, the registration and automation system in Anadolu University Open Education System can be cited as an example. Looking at these processes, it is possible to complete the registration steps completely online via an interface and perform the certification processes online. To reinforce belongingness during the registration phase, offices simulated with Virtual Reality or hologram technologies can be used.

CONTENT CREATION AND PRODUCTION PROCESS

In distance education, learning-teaching processes are mostly organised depending on the environments used. Therefore, computer-based communication technologies affect the organisation of processes such as motivating learners, presenting information, enabling application opportunities, evaluating success and providing academic support (McIsaac & Gunawardena, 1996). However, the preparation of textbooks, which are the soul learning materials for students, can be considered basic to the content production process. The effectiveness of the written/printed

materials provided to students can be ascertained based on three basic variables (Kaya, 2006),

- Level of readability of the material,
- Content of the material, and
- Design (arrangement, appearance) of the material.

Aspects like consistency, page layout, font type and size, writing style, visual materials and the use of highlighting tools also stand out as the important issues to be taken into account while printing the course materials. The components and design of course materials can be considered under the following processes as shown in Figure 4

Strong e-content prepared by an ODL institution can ensure the realisation of the e-Learning process, while weak e-content in all respects can also disrupt the learning-teaching process. When the e-content used in today's e-learning processes are examined, it is seen that interactive e-content are mostly developed in numerical lessons that can be expressed with concrete data and indicators. Besides, it is seen that the e-content in the lectures with verbal contents based solely on the text are presented with a simpler fiction (Demir, 2014). So, creating appropriate storyboards for the materials to be prepared based on the course books, which form the basis of the course contents and for shaping them according to the educational needs and characteristics of the target audience are the main tasks of the content designer and storyboard writer (Çiçek & Yazar, 2013; Varvel & Lindeman, 2005).

With the developments in technology, electronic materials that can be offered to the learners have also diversified. Today, different course materials can be followed up by presenting them to students through an LMS. In case of audio materials, visual contents, videos, games, etc. although the production process of each of the material is different, some common elements stand out when considered in terms of its components.

One of the models that can be taken as the basis of the content creation processes in ODL is the ADDIE model. This model, which is accepted as the foundation in instructional design; consists of five phases: Analysis,

Design, Development, Implementation and Evaluation (Dooley, Lindner & Dooley, 2005; Şimşek, 2013; Telg, Lundy, Irani, Bielema, Dooley, Anderson & Raulerson, 2005; Zheng & Smaldino, 2003). The transition process from one of these stages to the other occurs through renewal (Gustafson & Branch, 2002). In this model, which is accepted as the core of many models, the motivation factor is not considered.

Besides the ADDIE model; the Dick & Carey Model consisting of 10-steps “Define Objectives”, “Analyze”, “Define Students’ Behaviour and Characteristics”, “Determine Outcomes”, “Develop Criteria”, “Develop and Choose Instructional Materials”, “Make Figural Assessment”, “Do Self-Assessment” and “Review Teaching”, and the ARCS Model which explains how motivation’s known effect on learning and behaviour can be used in instructional design are the Models that can be used in the field of ODL.

According to the research conducted by Khodabandelou and Abu Samah (2012), it was revealed that the most used instructional design models are “ADDIE” as shown in Figure 5.

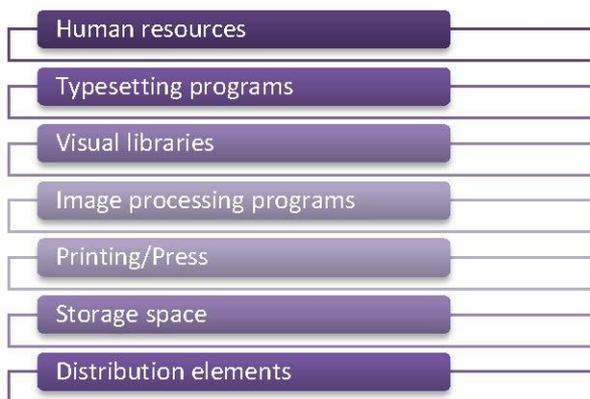


Figure 4. Course Material Design Process and Components.



Figure 5. ADDIE Model.

As we look at the e-Content development/content creation and preparation processes based on one of the instructional design models—ADDIE the following stages become important.

- Deciding on the course material to be produced by determining the need
- Choosing the programme/software to produce
- Creation of production teams
- Determining/obtaining the visuals to be used
- Writing appropriate scripts
- Making screen designs
- Adding sound elements such as voiceover, sound effects, music
- Preparation of templates
- Offering the prepared templates to the use of production teams
- Producing materials and sending them for control
- Uploading the approved materials to the LMS and
- Publishing them

In the Learning Technologies Research and Development Unit, which carries out its activities within the Anadolu University Open Education Faculty, the diversity in the course materials produced using current technologies is cultivated by the experience and knowledge of the institution, and this diversity of material is increased and maintained by employing developing technologies. In addition to the current textbooks in PDF format, mobi, epub and html5 documents, unit summary, audio book, audio summary, lecture videos, animated lecture videos, summary videos, exercise software, quiz questions, mock exams, leaf tests, interactive lessons, interactive videos, question cube game application, course materials such as concept maps and infographic descriptions, etc. are also produced.

Besides, the learners can be ensured to contribute to the system by creating their course materials. Individuals can upload their summaries, questions, presentations and similar course materials they have prepared into the system and make them available to other learners. Here, the

institution can work as an auditor. What’s more, those who fulfill certain criteria among these learners, can take on different tasks such as checking the uploads in the system and voting for the materials. Quality ambassadors who fulfill this task in Anadolu University Open Education System and work completely voluntarily for this purpose can be presented as an example of this practice.

In this regard, the components of content creation and production processes can be shown through Figure 6.

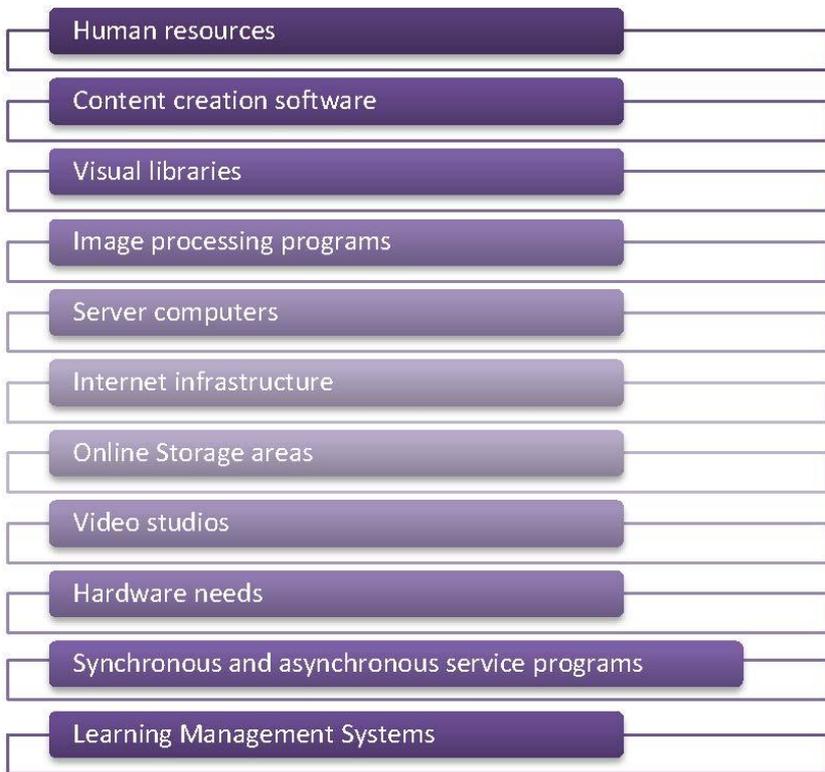


Figure 6. Components of Content Creation and Production Processes.

CONTENT PRESENTATION, PUBLICATION AND MANAGEMENT PROCESS

The presentation, publication and management processes of the e-contents are also some of the important processes of ODL. It is important to choose an LMS suitable for the contents, size and characteristics of the target audience. LMS is one of the most important elements of e-Learning activities. This system can be used as a WEB-based education platform that is open 24 hours a day, seven days a week, which includes the basic functions such as student's ability to view the course content, follow offline lessons and communicate with the school and other students (Demir, 2014). Students can use the supportive learning materials; follow the course contents and synchronous lessons via LMS. They can continuously communicate with the teachers or fellow students during online classes or through messages, forums, online chat environments, and thus, experience an interactive learning process.

At this stage, extra features such as learning analytics and the ability to use gamification elements in the LMS can also be examined. After the LMS is selected; setting up the system with the appropriate hardware, configuration and authorisation of user accounts in the set-up system, uploading the content to be presented and assigning it to users, if it is used, steps such as defining the assessment functions in the LMS are to be performed.

For example, AnadolmeCampus system, used in Anadolu University Open Education System, offers a multi-dimensional and flexible learning environment. Students use username and password given during registrations to log into the system. On eKampüs, students are provided with many different course materials such as PDF versions of textbooks, unit summaries, lecture videos, mock exams and games. The system also has a very comprehensive reporting feature. The featured components are given in Figure 7 below.

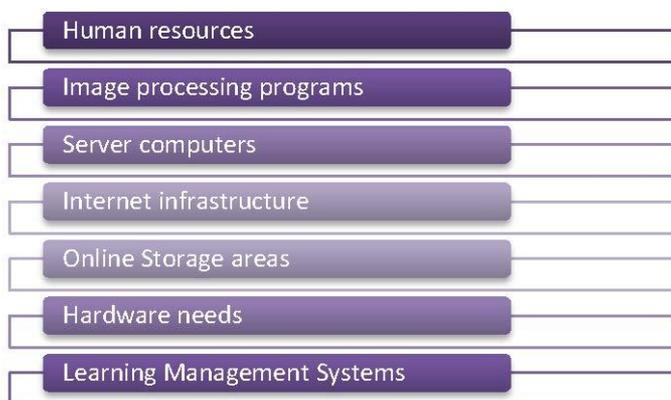


Figure 7. Components of Content Presentation, Publication and Management Processes.

In addition to the asynchronous contents offered to students, different services are also offered through different channels such as simultaneous counseling, live lessons and social media environments and so on. In the processes of these services, once again, human resources, software and hardware elements and technology components come to the fore.

PERFORMANCE TRACKING PROCESS

It is expected that these materials and the LMS will activate the learning process in the user. The learners can benefit from the learning services after registering in the system. To benefit from the LMS, the learners are assigned a common username and password by the system that they can use while accessing assistance services. With printable lecture-based course materials presented in the LMS, they can study the written descriptions of their units from materials such as PDF version of the textbook, unit summaries; let's learn with questions and so on. Besides, they can reinforce what they have learnt by testing themselves with question-based course materials such as solved questions, leaf tests, practice questions and trial exams.

Course materials such as audio books and audio summaries are particularly those materials that the visually impaired learners frequently demand. Asynchronous video narratives can also be seen as the effective materials that learners can use in their learning processes. Furthermore, live lessons conducted synchronously provide two-way communication in the learning process. It is thought that the visually aided expressions such as lectures to be supported with animation and moving images, and the use of infographics have a positive effect on the realisation of learning (Davis & Quinn, 2013). Besides, the contents supported with visual aided expressions, such as the use of animations and animated images, which can be expressed as multimedia contents and the use of infographics increase the understanding and motivation of individuals and change students' attitudes towards their lessons when compared to the traditional environment (Fischer & Horstendahl, 1997; Mishra & Sharma, 2005; Woodrow, Mayersmith & Pedretti, 2000).

In this process, they can also benefit from educational games that are edited and presented for their use to learn while having fun. They can also benefit from the materials that the learner can interact with, such as interactive books and videos. As the learners go through this process, they can produce their learning materials, use them by writing their summaries or questions, and even open them to other students' access by uploading them in the LMS.

In the "Quality Ambassadors" project, which consists of volunteer students in the Anadolu University Open Education System, students started to create their own contents and use them in their learning processes, as a result of the positive feedback received in the AnadoluCampus system. They created materials from their own summaries or questions as part of the project and were able to share them with the students taking that same course again through the system. Thus, with smart learning assistant applications, learning can be individualised, and the learning process of the individual can be maintained in the best and most efficient way by monitoring the learning behaviour of the learners.

MEASUREMENT AND ASSESSMENT/EXAM PROCESS

To carry out ODL programmes, it is important to make the correct job descriptions of the academic, administrative and technical staff who take charge at every stage to ensure the coordination and sustainability of these processes. Whether the institution achieves the targeted learning outcomes for the individuals, is determined by measurement-assessment processes. An examination organisation is also required for measurement and assessment. It measures students' performance and success. Besides, it also checks to what extent the communication of information and materials used in the curriculum provides success (Karakaya, 2003, p. 83). Assessment methods in distance education are examined in two different groups. These can be listed as Traditional assessment methods and Alternative assessment methods (Demirel & Gören, 2015).

Traditional Assessment Methods can be listed as the following:

- Oral Exams
- Written Exams
- Multiple-Choice Exams
- Fill-In Exams
- True/False Tests

While Alternative Assessment Methods can be listed as

- Portfolio Assessment
- Project
- Open Book
- Concept Maps
- Authentic Assessment
- Branched Tree
- Peer Assessment, and
- Group Assessment (Gülbahar, 2009, p. 185).

The interaction between the learner and the teacher is minimal in the measurement and assessment process. The correct organisation of this process is of great importance for the effectiveness of teaching and the students' success.

Exams and assessment applications can be carried out with the central system, and it will also be possible to do it with the online systems to be developed. Students can be authenticated and monitored during the monitoring and final assessment activities in online environments, including Anadolu University; thanks to online measurement and assessment systems such as the TESLA project (European Union Project supported within the scope of Horizon 2020 - An Adaptive Trust-Based E-Assessment System for Learning) aimed to design, develop and implement a reliable system. It will be possible to perform all stages of measurement and assessment in online environments just like registration and learning processes (Tesla, 2017).

Measurement and assessment are to be used effectively in the planning of education, such as designing the teaching environments, determining the learning goals, as well as measuring students' success (Tekin, 1996). The types of assessment and evaluation used in ODL should not only be seen in terms of learners' scoring or awarding certificates, documents, diplomas, etc. If the learner is successful, it should be ensured that the training activities are enriched and the measurement and assessment tools are developed with the training provided (Simonso, Smaldino, Albright, & Zvacek, 2003).

Among the Traditional paper-based measurement methods in ODL; in addition to techniques such as a multiple-choice, classical written exam, essay writing, gap-filling, True and False; Alternative methods such as performance evaluation, product file, project, problem and event-based learning can be given as examples of more constructivist approaches (Simonso, Smaldino, Albright & Zvacek, 2003). However, during the examination organisation in the measurement and assessment processes, there are many steps which are as the following:

- Determination of exam locations.
- Distribution of students to exam locations according to course types and grade levels.
- Making necessary arrangements by evaluating applications for change of exam location (if any).
- Determining the correct test location for individuals with special needs or defining home exam services.
- Arranging exam times and sessions.
- Transfer of the created exam location and course information to the student automation system by the data processing unit.
- Providing students access to exam entry documents from the automation system.
- Choosing the staff and preparing the job descriptions.
- Planning transportation and logistic services for document transportation before and after the exam.
- Preparing the printing house for printing and reproduction of examination documents and assignment of staff.
- Fulfilling the needs of the staff who will stay there as the printing house will be switched to a closed system and making the necessary arrangements in the physical conditions of the building.
- Determining the storage/depots for exam documents sent to the exam centres after their printing is completed, and security planning.
- Organising test reading teams and their technical infrastructure.
- Preparing an announcement system for the exam results.
- Question control/subject analysis and scoring of the exams that passed the assessment.
- The announcement of the results.

Human power and technological components that are active in this whole process play an important role in the success of the process. Besides, the preparation process, exam questions can be evaluated separately. Operation steps in this process can be listed as follows:

- System administrator
- Exam Organisation Coordinator
- Exam Coordinators (in provinces)
- Editor and Authors (question preparation)
- Test Research Unit
- Information Technologies Centre
- Typesetting and Printing
- Distribution, Security Coordinators and Teams
- Exam administration teams
- Exam reading, assessment and analysis teams are in charge,

In these processes, Physical environments, Technological machinery equipment, Software and Hardware components are also used. When the components are listed, it will be possible to reach the structure in Figure 8.

When the measurement and assessment process is evaluated in terms of learners, the following becomes relevant.

- Preparation by using the course materials before the exam
- Updating the choice of the exam place if necessary
- Obtaining the exam entrance document
- Checking the exam place one day in advance
- Participation in the exam

In the spring semester of the academic year 2019-2020, because of the COVID-19 Pandemic, distance education was applied to the formal higher education programmes in Turkey until the end of the semester. With that decision, all universities in Turkey had configured their courses to suit distance education and subsequently, online classroom structures were implemented. Alongside, the Higher Education Council implemented the open book project. With this project, Anadolu, Istanbul and Atatürk Universities, which offer educational services through the ODL mode, made all existing books prepared for ODL programmes available for all universities.

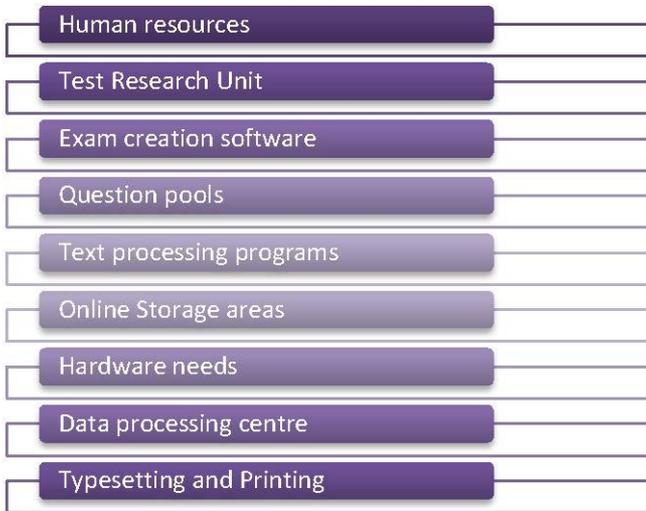


Figure 8. Components of Measurement and Assessment Process.

Within this period, Anadolu University also decided to conduct the Open Education System spring term/midterm exams online, considering the general health of the public within the scope of “stay at home” warnings. Hundreds of thousands of new questions were added to the question pool for the online exam, a “customised question” system was prepared, the exam software was developed, security precautions were taken and infrastructure development work was carried out. Alternatives such as exams in offices had been created for students with technological opportunities or access disabilities, and a new exam plan had been implemented. In this context, the following factors became important

- Hardware infrastructure
- Bandwidth
- A strong server infrastructure
- Software Needs
- Need for Security software
- Spatial needs
- Application of Artificial intelligence
- Control and audit software

- Support software and its team
- Crisis management strategies

COMMUNICATION AND SUPPORT PROCESS

In the 21st century, supporting services provided to the learners are seen as a part of the course content and the whole education process, and at this point, a holistic approach is adopted (Sache & Mark, 2000; Scalzo, Matela-Rodier & Ferraulio, 2000). Support Process is an important process to receive feedback from both staff and learners regarding the services offered in the ODL institutions and to make necessary corrections and improvements within the system in line with these statements. Developing systems and ensuring sustainability can be achieved with a correct communication planning and feedback process. The process must be planned correctly and managed in a coordinated manner. In this process, synchronous and asynchronous communication software such as assistant staff, teams responsible for control and correction organisation, communication officers, online environments, social media, video descriptions, forums, tracking software and hardware components of these services such as server computers are employed.

Bozkurt (2013) analysed and classified the studies on support services offered to students by the ODL institutions. This classification is given in the following Table 1.

The Open Education Support System—a living system and which is open for use by the students by Anadolu University Open Education System can be presented as an example of a support system that can be used in the ODL systems. In this system, providing a wide range of support services from registration services to exam results, the students

- can see previously asked questions and their answers
- get answers by adding their questions to the system
- view video responses for frequently asked questions

- benefit from live support service
- can get information about programmes abroad

Besides, with the 24/7 call centre, the students can benefit from the telephone support services for all questions regarding the system.

In Anadolu University Open Education system, the students also have a help desk and social media page for the AnadolomeKampus system. In this system, there is a voting and error feedback feature for each material regarding the course materials offered to the students. In this way, students can instantly transmit the technical errors or content errors to the system. Besides, they can also vote for the materials they find successful and sufficient. For example; Anadolu University Open Education system verified official social media accounts Face book/AOFAnadolum page and Instagram/anadoluuniv_acikogretimsistemi provide students information about services, current news from faculties, live broadcast sessions, etc. where they are informed about the departments and assessment systems, award-winning competitions, concerts and social activities, thereby reinforcing their feelings of belonging and socialisation within the institution by communicating both with the system and with each other.

When the components of the communication and support processes are examined, mainly the human resource component stands out. However, it is seen that many different components are employed, from synchronous and asynchronous communication software to server computers, from internet connections to video production software, etc. When these services are evaluated by the learners; they can get support from the help page for problems with course materials and for issues related to office services, from registration to exams support is available from the offices, call centre or support pages. They can communicate to socialise via social media, learn all the current news about the system, get instant answers to their questions, or they can quickly resolve a problem by being directed to the right channel. Social media can also contribute to the development of a sense of belonging. Specific needs for communication and support systems can be outline as shown in Figure 9 below.

Table 1. Classification of support services

Simpson	Rowntree & Thorpe	Rekkedal & Qvist-Eriksen	Keast, Lee	Keegan
Academic support services	Before programme	Prospective phase	Academic/tutorial support	Information phase
Non-academic support services	During programme	Start-up phase	Administrative support	Guidance phase
	After programme	Learning phase	Technical support	Registration phase
		Graduation phase	Counseling support	Integration phase
		After graduation phase	Library support	Final results phase
	Accreditation phase			
	Guidance on further study phase			

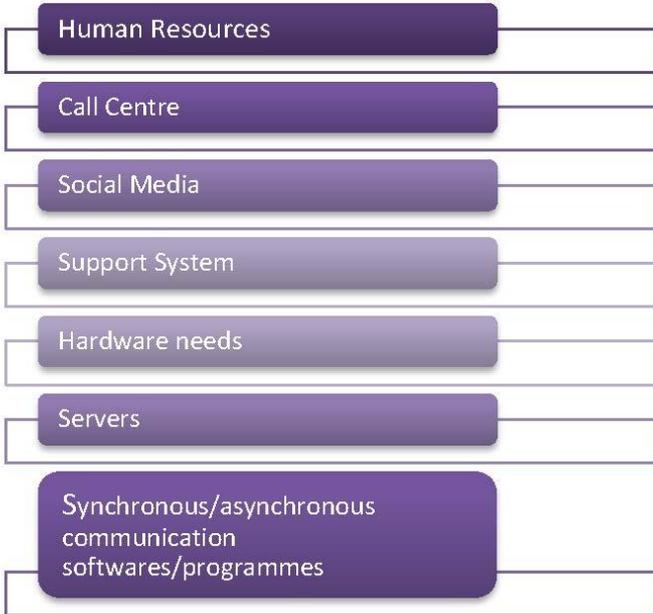


Figure 9. Need of Communication and Supports Processes.

All services such as certification, content, course materials, support, communication channels and similar services offered to students are also accessible on mobile devices and access to all these services is provided through the application called Mobile Platform. With the OES Solved Questions application, students are provided with access to question-based materials.

AUDIT, QUALITY AND ACCREDITATION PROCESS

ODL institutions that provide enrollment services, learning services and materials from the preparation of course contents to their control and presentation, it is important to constantly monitor the communication, assistance and support processes to increase the quality of service, ensure sustainability and improve the services by feeding on current developments and technologies.

Audits can be carried out by field experts separately for each stage throughout the process, or they can be followed up by supervisory institutions. The opinions of the students who use the service are also taken during the internal audit. Accreditation organisations such as Pearson, e-Excellence and FEDEK also inspect and approve the services of institutions and organisations that offer ODL services. Accreditation ensures that the certificates and diplomas of the institution are also valid abroad. For example, Anadolu University Open Education System has provided accreditation for many of its departments and contributed to its graduates by providing the necessary conditions to apply for a job abroad. The institution also studies on the quality and accreditation configurations for the ODL systems. The Association for Evaluation and Accreditation of Open and Distance Education Programmes, which started with the support of Anadolu University and which is today established and has set quality standards, fills a huge gap in this field. Nevertheless, human resources predominantly come to the fore in audit, quality and accreditation processes. However, there are also hardware needs and these are given in Figure 10.



Figure 10. Audit, Quality and Accreditation Process Needs.

CONCLUSION

From the above deliberations, it is understood that the ODL system is a set of processes. This system includes many different processes from planning to coordination of a programme to be opened, from records to exams, from learning to supervision. Although the ODL system constantly breathes and feeds information with technology and it will reach individuals mostly through technology, this system will always need human intervention despite the projected Technological singularity. Human resources stand out as the main component of the processes and the sustainability of the processes can be ensured only by employing human power, hardware, software and the components of the physical environment. Keeping the ODL system always up-to-date is possible only by effective and efficient use of human resources, integrating humans into the system and by ensuring humans' mastery over the current technologies.

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Chapter 5

**LEARNING WITH EDUCATIONAL DIGITAL
RPG GAMES FOR ONLINE AND DISTANCE
EDUCATION: IMPLICATIONS
FOR SOUTHEAST ASIA**

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ABSTRACT

Digital games based on image processing, particularly in the construction of 3D image modeling, are well known. These games, however very good for entertainment, and preferred by the software

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industry, seem ineffective in education. They seem to hamper the application of problem solving and the consequent complex learning and critical thinking of students. Since 2007, we have been developing educational digital games based on role playing and collective writing of game plots, experienced by student characters, who, when building the engagement of their characters in complex plots designed to simulate real world situations, take the decision-making position, which can only be carried out via reflection and criticism, which leads the student to a contractive learning situation. This chapter will present the context, method, research and results on the application of RPG digital educational games of this type in online and distance education in the context of Southeast Asia.

Keywords: digital games, distance education, collective writing, role-playing game

INTRODUCTION

Since 2005, we started investigating the capacity of digital RPG games to be used as an environment for critical-reflexive education, from a socio-constructivist approach. The available studies deal both with the ability of this type of digital game to be used in face-to-face education with digital support, as well as in distance education, although currently there is very little separation between these types of education is evident. After 15 years of research, we could gather some promising results, along with some challenges for new investigations. In this chapter, we shall present the main questions regarding our study on digital RPG games. We will present the main considerations that made us work with this alternative perspective of digital games. Then, we shall show how we have evolved the definition of Digital RPG Games and outlined their pedagogical characteristics to present our main researches and the methodology, the results, the difficulties faced, and finally, to provide some recommendations for those who want to apply such educational solutions.

DIGITAL GAMES FOR CRITICAL-REFLECTIVE EDUCATION

The emergence of the widespread digitalisation of human society across the globe in the last four or five decades is evident. This emergency seems to be participating actively in the globalisation trends of a planetary society, today reproducing a capitalist hegemony (Chesnais, 2016), but already presenting itself with a new logic of social organisation, for many identified as a network society (Castells, 1999). With digitality advancing and occupying every aspect of our daily life in the human society, it would be impossible to ignore its influence on education. In addition, the influence has really been great. However, we agree with David Jonassen who stated in his classic book *Computers in the Classroom* (1999) that while computers did not become cognitive partners, virtualising machines—the enhancers of human interaction, their use in education was even harmful. In fact, the use of video games in education in many cases impairs the development of critical-creative thinking. There are many reported cases of the difficulties and failure to form critical thinking with the use of educational games (Jones & Flint, 2013). This does not mean that digital games should not be used. We do need to think about how, and what type of games we should use for educational purposes.

Many, perhaps a majority of digital games, very suitable for entertainment and fun, are designed to meet certain procedures necessary to fulfill the stages and objectives predetermined by the programmers. This makes them unsuitable for the complex learning necessary for more serious games, whose first objective would be complex teaching learning, not entertainment. It is clear that the quality of image modeling, the involvement of characters in an engaging story, will engage the player—the student. However, especially if there is no educational project involved, the development that would be made possible by decision making and complex interactivity, are in fact replaced by a certain type of repetition, by the acquisition of certain physical movements and choices induced by the program, which ultimately represent success for the purpose of the game, but very little learning.

It is necessary therefore that the game can be organised around the challenges and creative possibilities of using the complex abilities of the mind, working around decision making and simulations that carry out effects from these decision making, so that the educational digital game allow experimentation at some practical level, thus enabling complex learning and creativity, and problem solving (Jonassen, 1999). We always work considering this need for learning mediated by the praxis shared between the learning being and its experienced context (Gomes, Sharma, Matta, & Robatto, 2019; Vygotski, 2000). With this basis of thought in mind, we then chose to work with educational software, and with educational games capable of providing this type of experimentation and learning. Therefore, we started our research on digital RPG games 15 years ago.

DIGITAL RPG GAMES AND CRITICAL REFLECTIVE EDUCATION

It seems that in the 1960s, we can identify the growth moment of groups dedicated to the practice of various forms of war-game, mainly in the United States. The development process took a few years until 1971, or even more strongly until 1974, when the first Role-Playing Game (RPG), the DEANgeons & Dragons (RPGmaisbarato, 2018; Witwer, 2016), appeared. In this period, a series of rules matured, which, put into practice, were able to conduct and perform a role-playing game in which each player could create a character, and act with him in fantasy scenarios, which are in fact simulations of situations conducted by another player called a master.

The Master conducts a storyline, contextualised and defined in the form of an appropriate script: a situation designed to have several, literally infinite, possibilities of course in terms of the players' decision-making practices, related to each situation conducted by the Master. RPGs are, therefore, role-playing games conducted by players, who must experience

situations and scenarios led by a master player-in the role-playing game, the master representing the scenario and its influence on the players, as well as the action of non-player characters, present in this scenario. The game takes place in the dialogical relationship between the conduct of the master over the scenario, and the conduct of the characters by the players. The effect is the realisation of a succession of decision-making, autonomous, but interdependent, of each player present, which ends up generating conditions for all sorts of complex decision-making praxis on the part of these players (Caballero, 2018).

Table 1. Socio-constructivist Principles present in the Educational Digital Role-playing Game (Caballero, 2018)

Socioconstructive Principles	Description
Social Interaction	Because it is collaborative and interactive, the digital role-playing game drives online social interaction. Online social interaction is one of the foundations of the digital RPG game. Through the forum, players build a story in collaboration with each other. The subjects involved in this interaction help each other to achieve common goals set by the game.
Immediate Development Zone (IDZ)	The digital role-playing game supports forms of thinking and reasoning at IDZ through challenges and problem situations to be solved by players in collaboration. The game, in general, enhances the appearance of IDZ. Moreover, in this perspective, the digital RPG game contributes to the learning process, considering that in many situations, the more experienced assist the less experienced in a certain subject. IDZ allows us to outline the dynamic state of development.
Mediation	Symbolic mediation occurs through instruments and signs that are interposed between the subjects and their concrete action on the world. Mediation can also take place through an experience shared with other subjects. The digital RPG is seen, by this study, as a mediating instrument of the learning process and composed of signs such as the system of rules and images that make up the game scenario.
Concept formation	The interactive story present in the game provides students with the formation of concepts related to the theme addressed, as they are asked to solve problems, overcome challenges and make decisions. The formation of scientific concepts occurs from language, in the interaction with the other. A scientific concept can only be built based on a spontaneous concept, being, therefore, one of the superior psychological functions pointed out by Vygotski.

As a result of this realisation, conducted through a succession of decision-making, the RPG is carried out amid a situation of extreme interactivity. In fact, we can associate the game with a series of socio-constructivist Vygotskian characteristics, which make us realise the potential and applicability of RPGs as a proposal for learning complex skills (Caballero, 2018). Above is a Table detailing the socio-constructivist characteristics that are associated with the practice of RPG games.

COGNITIVE FRAMEWORK OF RPGS

To these socio-constructivist characteristics of the RPGs, we add the versatility of themes that can be addressed by the simulations created. The master player may have been the creator of the RPG script himself, or he may also conduct scripts specially designed to create any scenario or perspective desired by screenwriters. In this sense, the RPG script reaches the condition of being used by serious games, capable of focusing on teaching learning, maintaining the desirable playful character, but with explicit educational purposes.

To finish the cognitive and educational characterisation of RPG games, we must add the character of collective writing. If we analyse the result of each RPG game, we see that they are a succession of construction of texts. The master expresses, in writing or orally, the indications and directions of the scenario, while each player expresses his own autonomous and creative intervention in face of the presented scenario. Each intervention changes and influences the next textual intervention, so that at the end we have the composition of a collective text. This characteristic of being a collaborative construction of text (Nunes, Oakley & Nisi, 2017), turns RPG into a game based on collective composition carried out by a learning community (Wenger, 2004), since the collective of the players ends up learning collectively the elements with which they participate in each simulation.

Since the beginning of the development of digital games, computer and network systems based on RPG have been created. Most of these systems, however, do not have the character of collective text production, and do

not carry out complex decision making, which we are characterising as effective for the complex learning that we defend. They are applauded and highlighted for their interactivity, but most of the time, this interactivity does not go beyond the handling of the console, and the mechanical attendance of players to decisions by decision, which are carried out in the form of simple digitisation of the mouse, or in the punctual sum of some aggregates of movement data (ECK, 2006). It is lost by carrying all the socio-constructivist wealth presented in Table 1.

Fortunately, some systems, such as our RPGAD, try to transfer all the complexity of the so-called table RPGs, in person, to the digital world, which can be used in online and distance education. We have thus defined our alternative by studying educational RPG games, and we will present the advances we have made as below.

PSYCHO-PEDAGOGICAL ASPECTS OF EDUCATIONAL DIGITAL RPGS

Since 2005, our research group, REDE-EDUCA (CNPQ, 2009) has been researching RPG in many aspects. Our focus has been on researching the psycho-pedagogical aspects of educational digital RPGs. If we are developing knowledge about this type of game and its application in education, we have to research what teaching-learning characteristics are involved when choosing to use this type of educational game. Caballero's (2018) work identified that up to 81% of students engaged in educational digital RPG games, from our research, developed collaborative skill and practice; up to 25% demonstrated exercise of critical-reflective thinking; up to 79% demonstrated development of imagination and creativity; and up to 75% of students experienced the construction of collective text and co-authorship of the game script. The RPG clearly works on the socio-constructivist aspects of complex learning that we were interested in developing since the beginning of the research. In the same work, we managed to identify a group of cognitive operations, as well as cognitive

skills, which are exercised by those engaged in this type of game. The set of these skills and operations, taken together, showed great relevance in the acquisition of the practices of collaboration, creativity, exercise of critical thinking and in the co-authoring practice of text and script, developed by teachers and students who used the games. We recommend to anyone interested in studies on teaching learning with educational digital RPG games, to look for the study of Caballero (2018), located in our references.

RPG IN ONLINE AND DISTANCE EDUCATION

Another field of research and development was the construction of computer systems to support the practice of RPG in online and distance education. In 2011, we developed the first RPG system of our research group; it was the RPG by Moodle, built to function as part of the Moodle Distance Education system. We recently developed the RPGAD, which has a version running on computers and another on an Android application (Matta, 2019). The personal computer system can be found at the WEB address: <http://demo.rpgad.net.br/login>. Registration and use are free. The user should contact us by email: alfredo@matta.pro.br, if he wishes to install a copy on his own server. The APP for Android can be downloaded for free in the Google PlayStore. Once the PlayStore is activated, the user must search for the RPGAD. The system is in Portuguese. The development of our system accompanied our research on teaching-learning using RPG. In this way, the current system is developed considering the results that we have obtained in relation to teaching learning.

Both research in psycho-pedagogy applied to digital RPG games, as well as that to develop support systems for RPG, are fundamental to the development of RPG applications in education. These we developed in three groups. The oldest and most frequently investigated group is the one that builds digital RPG games for formal Brazilian school education. In this modality, we highlight the developments of the *Dois de Julho*, *Canudos*, *Abolição* and *Escravidados* games. Due to our connection with the study of history, we developed these four games to work with this field

of knowledge. However, we also have RPG to study mathematics, literature, art, also developed for school education.

Table 2. Educational Digital Role-playing Games produced for School learning

Game Name	Description	Learning Analysis
RPG Canudos (Vidal, 2013).	It is the simulation by RPG script of the Canudos War: a popular upheaval that opposed military personnel from the newly formed Brazilian Republic to hinterland communities in northeastern Brazil.	The student lives in an experience of participation in the life of the Brazilian semi-arid hinterland, facing the reality of the northeastern drought, in addition to living with one of the greatest and most important moments of popular resistance of the Brazilian people to state oppression.
RPG Dois de Julho (Mesquita, 2018).	Dois de Julho simulates the event of the Independence of Brazil in Bahia. The student participates in the wars of Independence and experiences the main issues involved.	The student will experience living in Salvador in the 19 th century, participating in the discussions of the independence projects that disputed that moment. In addition, the entire contradiction of Brazilian slave society can be experienced.
RPG Abolição (Souza, 2016).	In this game, the script simulates the time when the Brazilian people fought against slavery, making the players participate in these fights.	In this game, it is possible for the player to participate representing a slave and Afro-descendant character, or a free black man who fights against trafficking, so that he can at least experience discrimination and the difficulty of having a black color. In addition, the entire contradiction of Brazilian slave society can be experienced, as well as the knowledge of trafficking and its actions.
RPG Escravizados (Oliveira, 2017).	The game engages the player's participation in the routes of the slave trade of the 17 th century, from Africa, at the time of capture, until the arrival and life in the slave quarters.	In this RPG, the student will experience the terror of the slave trade in all its inhumanity and cruelty. There is also an important African context capable of giving the player an idea of what it would be like to live on that continent, its ancient cultures, and cultural wealth. One experiences the slave ship, the arrival in Bahia. The issues of life in American lands. In addition, the entire contradiction of Brazilian slave society can be experienced, as well as the knowledge of trafficking and its actions.

Each RPG built to teach history produces scripts that seek to engage students in the life and historical process of the simulated period and event. For teaching and learning history, the results were promising. Each research activity produces a plot based on the relevant contextualised study. The game master conducts the actions and decision-making in such a way that the players are taken to participate in the challenges of that time and situation, according to the understanding arising from historiographic research, which has their situations dramatically put in the RPG scripts created, and which will be experienced by the student. Each student participates, with their decision-making, in the historical process, and also in the problem in question, greatly developing their own learning about history, its interpretation, and their knowledge about how that historical event still affects the present of their society, as well as their own. Table 2 above presents a description of the games that we built in applied research for the teaching of History.

RPGS FOR OPEN EDUCATION

Table 3. Educational Digital Role-playing Games produced for Informal Learning

Game Name	Description	Learning Analysis
RPG Aqua	The futuristic script depicts a São Francisco River basin devastated by environmental disasters and in need of recovery.	The student experiences contemporary environmental issues, through their supposed consequences, in the future. It also addresses the need to learn how to treat the great São Francisco River well, as well as how to manage sustainable fishing. Furthermore, it coexists with the riverside community and its culture. The game focused on the environment.
RPG Religare (Santos Filho, 2019).	This game deals with the need for peaceful and articulate coexistence of people with different religious beliefs and backgrounds. It presents its own itineraries so that one can live with religious diversity.	Situations of participation and coexistence with characters who have different religious beliefs, and the realisation of scripts that teach how to live harmoniously with these differences, are the focus of this game.

A second research group sought to build educational digital RPG games for broader themes and knowledge belonging to more open education proposals, although they can also be used for school education. They are certainly usable in informal education procedures. In this group, we highlight two productions: the RPG *Áqua* and the RPG *Religare*. Table 3 above describes the two productions.

RPG FOR PROFESSIONAL EDUCATION / SKILLS DEVELOPMENT

The third research group was dedicated to the development of RPG for professional education. This group focused on the development of skills capable of providing employment and income to those who participate. We highlighted the production of RPG *PMBA* and RPG *TBC*, as shown in Table 4 below:

Table 4. Educational Digital Role-playing Games produced for Professional Learning

Game Name	Description	Learning Analysis
RPG PMBA (Ribeiro, 2016).	They are scripts that simulate the situations of collapse and action by the military, in the state of Bahia, Brazil.	Designed for training in situations that require decision-making in accordance with corporate standards. Currently, the scripts focus on policing major events, as well as the program to combat drug trafficking in schools. Student police officers will live with the issues of this type of policing.
RPG TBC (Alves, 2018).	The RPG works on training for the practice of Community Based Tourism by communities that wish to prepare for this type of action. The scripts are prepared so that the RPG is a preparatory course for the activity.	Students are led to experience issues related to living with the cultural diversity of each community. They are also presented with issues related to fair trade, sustainable activities, and coexistence with ecosystem-economics, typical of community-based tourism.

Therefore, we developed a set of theoretical-applied knowledge composed of psycho-pedagogical basis, and also software to support the proposed digital game, and a series of applications for various educational proposals. An accumulated experience of 15 years of research now offers us the ability to recommend with some confidence, this type of application for education and distance education, with the condition that we point out advantages, gains and difficulties.

METHODS

There are 20 years of research focused on the development of applied research on educational technology, 15 of which working on the development of educational digital RPG games. We have been working in three directions, all of applied research: We work with the development of educational Virtual Museums, with Cognitive Design proposals for WEB Pages and Portals, and with the development of educational digital RPG games, which we detail in this chapter. Epistemologically, we adopted an educational approach focused on Vygotski's (2000) dialectical conceptions, considering Bakhtin's (2003) dialogism, in addition always considering educational praxis according to Paulo Freire's (1996) recommendations. This socio-constructivist base, committed to the collective sharing and construction of knowledge, requires an equally dialectical methodological approach to research that is capable of following what epistemology leads to.

It is necessary to understand that the methodology is part of the success of this type of game development, which proposes to be participatory and based on the collective construction of texts and scripts. In recent years, we have found a methodological approach capable of supporting and articulating research structure to the participatory production of games that we aim for. That is why; we highlight the work methodology and strongly advise those interested in using the digital educational RPG, who can adopt the same posture and methodological design. Thus, in each pedagogical procedure, they will carry out an

investigation about the game and its learning results, in a collaborative way.

Although we started our investigations using pre-experimental research methodology (McMillan, 2010), since 2013 we have taken advantage of Research-Application, Design-Based Research (DBR). The main feature of this methodology, which attracts us to the point of fully adopting it in our current research effort, is its circular character. The Search-Application works with successive cycles, for us considered uninterrupted.

There are 4 phases that we can explain below:

- 1) Shared context is collaboratively built with the communities of potential users of the digital game. It is a proposal for collective writing. In this way, we present the conception that we have of the context of the game as well as the context that we interpret to be that of the community in which it will be used, for itself, sharing with them the concept that we make of themselves, as well as the concepts that we have about the relationships between them, and what we are going to produce. Thus, we developed concepts derived from the dialogue with them, thus perfecting the basis that we will use to design the script and elements of the given RPG game, in the direction of a contextualisation capable of meeting the expectations of the subjects involved.
- 2) After the construction of the contextualisation comes the phase of gathering theoretical and conceptual proposals capable of supporting the necessary computational modeling and RPG game. It is also the time to study the content involved in what you want to teach. To develop applied knowledge on how to organise the pedagogical proposal of the game, the course plan present in the campaign to be built. This phase continues in collaboration with those engaged in the process. The community for which the game is being developed must participate in some way in the study of the conceptual alternatives that should be adopted for the construction of the game model. This turns everyone involved into co-authors of the game to be produced.

- 3) It is the moment of the Development of the computer modeling and RPG game necessary for the construction of the proposal that solves the demand of the community. The modeling potentially focuses on two fronts: on the one hand, it is the moment of the construction of the game script and the teaching-learning proposal. Each educational RPG should be interpreted as a program of studies.

The design group prepares the Campaign first: that is, it conceives the situation and the general plot, in which each simulation script to be lived will develop. For example: when designing the RPG PMBA, a scenario was elaborated based on the real context of the practice of policing large public, festive, sporting and other events that are frequently held in the city of Salvador, in Bahia - Brazil. After the scenario design, the specific cases of the simulation plot are projected and will be transformed into an RPG script by modeling. In the example mentioned, simulated cases were scripted for policing the Senhor do Bonfim Religious Festival, as well as another for policing political street demonstrations.

Therefore, it is projected that the cases that will be taken to the experience of problem solving and decision making, based on the knowledge of the social context of the situation to be lived, and on the analysis of those who will be the students. The participation of future students and the community involved usually optimises the modeled situations and their perspective of solution, in the sense of the desired learning. In parallel with the development of the simulation scripts, the study programs, approach and evaluation processes that will be generated in the digital educational RPG game are also designed. Therefore, it is part of the modeling, the pedagogical and didactic conception of each application. Depending on the situation and need, the modeling can be accompanied by the development of media, prints, images, videos, which will compose the set of realisation of each script, as well as the programming and development of a computer system capable of managing the practice of gamification in creation. The RPGAD software was developed in new versions, each time a new gamification challenge

required. In this way, from the modeling phase comes an initial version of the gamification solution designed in conjunction with the given learning problem, as well as with the community of beneficiaries, including potential students.

- 4) A series of cycles of practice, evaluation, analysis and reconstruction, constitutes the fourth and final phase. So that the development of the solution model is always evolving: essentially this is the fourth phase of Research-Application applied to the scientific development of educational digital RPG games. The initial version of the solution delivered by the previous phase goes into the field and will then be used for the training and qualification of people. It is advisable, but not necessary, for the teacher to assume the condition of the Master. However, he can also coordinate game tables that have one student as a master and others as players. The process of practising the role-playing game will develop the projected learning, but it will also gather new impressions, suggestions and criticisms of the elaborated procedure, so that there is a permanent and continuous return on the elaborated gamification model. In this way, an application cycle, new development is established which would always be updating the educational proposal in question. The research and development of the game, in practice, never ends. In addition, each group of apprentices involved becomes a new work and projection group for improving the game, always engaged and belonging to the group involved.

Methodologically, by adopting Research-Application, we can understand that all research on developing solutions for educational digital RPG games are one. In other words, each new case to be modeled already starts the development path starting from the advances and developments of the previous cases. The research proposal is continued, as well as the development of the solutions and the advantage is to consider each research and development of a digital RPG game as being a new bigger

research cycle, thus fitting all investigations as part of a major investigation.

IMPLICATIONS OF RPGS FOR SOUTH ASIA AND SOUTH EAST ASIA

The accumulation of our research is capable of providing some results for those who wish to use educational digital RPG games.

Firstly, this type of educational game can be applied to formal or informal teaching, and to students who have already developed complex thinking: that is, students aged 8 years or older. It is clear that models prepared for children, for teenagers, for adults, must have the appropriate work of adaptation to each age group.

The game has been used, for example, in short-term extension courses, carried out with distance education, also as a complementary educational practice for some classes of Brazilian basic education. In this case, with classroom teaching of digital support. We have also used it for teaching in the Bachelor of History, in distance education, at the Universidade do Estado da Bahia, and indeed in many other courses.

Regarding the content and study material to be taught by courses via Digital RPG, our experience indicates that there is no limit. RPGs can be used for teaching and learning any topic. The challenge is to prepare the scripts for the players to experience problem solving, and build decision making, around the content points that are desired to be mastered by the learners. Of course, practice-related expertise is more easily modeled.

However, theoretical or other expertise depends only on how we engage the challenge of finding and carrying out what is involved in the plot and script in question. Cognitively, playing educational digital RPG implies developing in students

- 1) The collaborative practice and attitude.
- 2) Authorship and co-authorship of meaning and signification in the form of text, image, or any other form of media.
- 3) The application of complex and reflective thinking with a focus on decision making and problem solving; and
- 4) The development of creativity and innovative creative thinking.

These 4 aspects are what we find in 15 years of research, as happening, every time a student engages in an RPG game. These 4 dimensions of cognitive development are well linked to socio-constructivism and its long tradition as a learning architecture (Gergen, 2009). It is through this cognitive path that RPG games are a strong option for learning any topic.

DISCUSSION

Once you have mastered the Research-Application methodology and the basic concepts of the RPG game, developing new proposals and pedagogical solutions with this type of gamification, is relatively simple and recommended. We do not think that we cannot develop RPG with another methodology, but we do think it is important to recommend developing in a collaborative format, and in a continuous process of development and remodeling, as we do. On the application of digital RPG, according to what we have collected, it is a very effective pedagogical practice for the purposes of its cognitive focus, applied to small groups. As it is a game based on the production of text, and reading, of each player - texts that propose to be a representation of actions built with reflection, it cannot work for groups with more than 8 or 10 players, plus the master. For this reason, the teacher can, and often chooses, to have several RPG tables being held by various groups of students, so that all students in his class can have the experience of RPG, and then can participate in moments of socialisation of experiences and results.

Another important issue concerns the dominant visual digital culture. Video games based on image modeling, and console interactivity, or

mechanical operations, dominate the market and are present in the entertainment of young people and adults everywhere. When proposing an educational digital game to a group of students, we have to keep in mind that they will first imagine that it is a game based on the same visual logic, and of mechanical interactivity. There is an important work to prepare the groups of players, and didactic conception. We are currently busy investigating this didactic aspect, which implies knowing how we should present and lead students to engage in the type of reflective game based on the collective construction of text and stimulating critical thinking, which RPG represents.

This is a precaution that we recommend to those who wish to use digital RPG in education: thinking about the didactic solution and how to engage students today who are very dependent on image and presentation speed, not very patient for reflection and adept at quick interaction and a solution based on image and its movement. It happens, then, that if we want to develop critical-reflective thinking, we have to develop this possibility of the existence of moments, in which reflection will happen, before it sustains the performance of actions and decision-making that are a consequence of the complex cognitive operation interested in preparing students. Therefore, reflecting and didactically preparing, mainly the beginning of RPG games, seems to be a necessity to be fulfilled.

CONCLUSION

We presented a set of results from our research on the application of educational digital RPG games in varied pedagogical practices. In these years, we have been able to accumulate important results on the cognitive characteristics of this type of gamification besides obtaining some results in the construction of appropriate computer systems to support this game. One of the main advances was the achievement of an applied research approach capable of conducting the scientific studies we need, while allowing us to remain alongside the learning communities we approach, as a cognitive partner: research-application. Finally, we present our main

successful applications, our concrete results of advances, and we also highlight the main challenges of the moment: the study of didactic drawings capable of presenting more easily, to students accustomed to the speed of the presentations and immediate conclusions coming from a very imagnetic, a more reflective pedagogical proposal that takes place in the learning of complex skills. There are some advances, challenges and difficulties built in the applied research that we have developed over the years on gamification and digital games, applied to distance education. We believe we can present useful content to those interested in this type of application.

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Chapter 6

**LIFE LONG LEARNING THROUGH ODL:
AN INTER-INSTITUTIONAL STUDY WITH
SPECIAL REFERENCE TO KKHOSU,
INDIA AND KNOU, KOREA**

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ABSTRACT

In the recent years, the entire educational system has converted from traditional system to an independent ICT-based learning system. In this chapter, a detailed inter-institutional case study has been done on Korea National Open University, Korea and Krishna Kanta Handiqui State Open University, India. It is important to see how far a developed country like Korea and a developing country like India are able to sensitize the people about the functional literacy and digital skills on the part of the learners in

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the true sense. Are quality educational and lifelong learning opportunities achieved by the people in equal manner? Is there any prevailing disparity among the people of rural and urban, haves and have nots etc. in terms of accessing education through ODL mode? How can the adopted model of the National Open University of Korea in providing lifelong learning opportunities show the way to enhance skills in the young learners in the Indian open universities? These are some of the questions that will be explored in this chapter. Besides, in the context of the Covid 19 pandemic, the chapter will also explore how online courses, like those prevalent in Korea National Open University, can pave the way to mitigate the learning difficulties of both the life-long learners and fresh learners in a country like India. In fact, an attempt has been made in this chapter to analyze the prevailing educational support services provided by a top ranking university like KNOU and how that can be the torchbearer for providing education to the Indian learners without any disruption even during a crisis situation.

Keywords: lifelong learning, ODL, online learning, ICTs, inter institutional study

INTRODUCTION

The institutions of higher education across the world should be the think tanks for ensuring socio-economic mobilisation of the people of as a whole. Therefore, the educational institutions should try to bring up the multifaceted human resources development and provide world-class education to all so that the gap between the haves and have-nots can be mitigated to ensure social peace and progress in the society. The introduction of the world-class education or the internationalisation of education helps to ensure distributive justice by promoting equity and quality of living among the people of any country. Thus, need based education would play an important role in mobilising the human resources by enhancing their capabilities and skills in a productive direction. There is no doubt about the fact that a country can be developed only when its people are engaged in some vibrant and productive activities, which is otherwise possible only through quality and need-based education.

In the 21st century, the policy makers are discussing how education should be made skill-oriented which would develop and strengthen the capabilities of the people and make them productive citizens in future. Sustainable education, that follows the inclusive and non-discriminatory pedagogy, is the only way that provides the basic knowledge, training and relevant skills to the people and make the citizen productive in the real sense. Sustainable education, which allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a *sustainable* future, is the need of the hour. Sustainable education can only lead towards sustainable development where the basic principle is to develop the wellbeing of both the planet and its people. Therefore, the basic philosophy of sustainable education is to bring long-term benefits and welfare to all. Besides, it is only sustainable education that would prepare the learners for a sustainable living.

Acknowledging the need for sustainable development through sustainable education, the Heads of States, Governments and High Representatives, in their meeting at United Nations Headquarters in New York on 25th September 2015, adopted the document titled *Transforming Our World: the 2030 Agenda for Sustainable Development*. The idea was to adopt a new set of global Sustainable Development Goals, which would transform the world in the next 15 years. There are 17 goals to be achieved by 2030 for sustainable development. With regard to education, there is a specific goal (Goal 4), where there is a target to achieve the inclusive and equitable quality education and to promote life-long learning opportunities for all. One of the objectives of the goal is to focus on the acquisition of foundational and higher order skills, greater and more equitable access to technical and vocational education, training and higher education, training throughout life; and the acquisition of the knowledge, skills and values needed to be functional so that it would contribute to society.

Thus, the basic focus of SDG4 is ‘lifelong learning opportunities for all’ which comprises all learning activities undertaken throughout life with the aim of improving knowledge, skills and competencies, within personal, civic, social and employment-related perspectives. Besides, the entire educational transactions of the world have become techno-based where

there is the demand for equipping the adults with necessary digital skills, which are defined as a range of abilities to use digital devices, communication applications, and networks to access and manage information. These modern contexts have facilitated myriad opportunities to people to create and share digital contents, communicate and collaborate, and solve problems for effective and creative self-fulfillment in life, learning, work, and social activities at large.

Besides, it has been increasingly being felt that everyone should be well equipped with digital skills, which are the pre-requisite for getting jobs and livelihood in the digital economy of the 21st century. The utilisation of on-line learning as well as distance and open learning has made learning truly global. Along with this, the whole pedagogy of education is to makes people functionally literate or digitally skilled. It is because; people want such education that ensures better sustenance of living. Therefore, the entire educational system is converted from traditional education system to independent ICT-based learning system. This kind of education would help the learners to possess the relevant digital skills that would further help to promote inclusive and equitable education and lifelong learning. Again, the idea of sustainable education should be designed in such a way that it helps to reduce the inequalities between haves and have nots, the gender divides, while also keeping the learners up-to-date and educationally competent on the basis of their learnt skills.

Even, in the context of India, the Ministry of Human Resource Development, has been putting more and more emphasis on developing necessary skills among the learners, as they need to be polished throughout their working life. These skills are necessary not only for securing a job, but also for ensuring personal development in various ways. In fact, the appropriate application of knowledge in some emerging areas such as Agriculture and other manufacturing areas can play a major role in providing a competitive edge to the Indian economy in the global market. The Commonwealth of Learning (COL) also has demonstrated that by using Information and Communication Technology (ICT) and flexible-blended learning approaches, access to quality technical and vocational

skill development can be increased which can further help to overcome the urban-rural and gender divides that exclude learners from training, and create a skilled workforce of life-long learners for the growth of informal and formal economies.

Thus, the idea of sustainable education has the potential to create a knowledge-movement in every aspect of human life in the 21st century society. Besides, for promoting and facilitating sustainable education or lifelong learning opportunities, various educational pedagogical techniques or methods are evolving in a massive way so that anyone can access the world-class education at his or her own place and pace. In this context in the modern industrial era, the modern interventions like Open Educational Resources (OERs) and MOOCs have provided the platform for opening up the minds of the people hungry of knowledge. The higher educational institutions mostly the open and distance learning institutions has the flexibility to equip the young people with relevant that prepares all the people of the nation to become responsible citizens who value a democratic and pluralistic society. However, in reality, it seems that still in India, only 5% of the population within the age group of 19-24 acquired some sort of skills through vocational education while the corresponding figure for the country like Korea is as high as 96% (World Development Report, 2018).

Thus, it is an urgent need of the time to see to what extent and what are the ways through which the various online courses as well as MOOCs and OERs are designed and implemented for creating the knowledge movement particularly through the ODL mode in a technologically sophisticated country such as Korea and a technologically upcoming country like India. This chapter is based on a detailed inter-institutional case study of KNOU and KKHSOU in order to know to what extent both these ODL universities are able to provide lifelong learning opportunities to the people with the help ICTs or through online versions of deliverable educations.

SIGNIFICANCE OF THE STUDY

It has been felt that the pedagogy of the oppressed is a pre-requisite for bringing positive social transformation and making the people empowered in every aspect of their life. The Brazilian educator and philosopher Paulo Freire (1970), who is also the leading advocate of the 'Pedagogy of the Oppressed', famously rejected the banking system of education policy in his seminal book *Pedagogy of the Oppressed*. Because, this system of education allows only a few people to receive education in society. Freire called for providing education to all sections of people in a liberal way because he felt that the pedagogy of the oppressed and marginalised can only boost up the knowledge economy, and subsequently, all people in a society can contribute economically and socially in an equitable manner. As new ideas and interventions in the field of education are gaining grounds in the 21st century, MOOCs and OERs have proven very handy as providers of educational opportunities to all sections of society and thereby helping to realise Freire's views on the beneficiaries in a more engaging way. However, besides the utilisation of on-line learning through ODL, it makes people functionally literate or digitally skilled, thus, helping the learners to be a part of inclusive and equitable education or lifelong learning opportunity.

As an example, which is first of its kind in India, the Human Resource Development Ministry, Government of India introduced Study Webs of Active Learning for Young Aspiring Minds or SWAYAM, where teachers from institutions like the IITs, IIMs, and central universities have been offering online courses to the citizens of India. In order to ensure the quality of the contents produced and delivered through SWAYAM, seven National Coordinators have been appointed. They are NPTEL for engineering, UGC for post-graduation education, CEC (Consortium for Educational Communication) for under-graduate education, NCERT & NIOS for school education, IGNOU for out of the school students, and IIMB for management studies. In the first phase, courses in areas of engineering education, social science, energy, management, basic sciences were offered. Besides, it has been stated that at least 20% materials from

the total number of courses by an Indian University should be released in the form of MOOCs (UGC Regulation, 2016) for the fast mobilisation and dissemination of knowledge and information among the masses. Another recommendation is that all Indian universities should develop the learning management system and release their OER materials as MOOCs in the SWAYAM platform for making education more vibrant and sustainable.

But another fact is that when we are talking about quality higher education, access to higher education is still a dream for millions of people residing in the world. Besides GER, the need of required higher education avenues or institutional set up against the demand of the population, achievement of global learning etc. equally by the people in rural and urban areas; providing equal access to learning, justice to cost benefit analysis, research and innovations, use of educational technology, quality and adequate funds for expansion of higher education, modern up to date education to the internal migrants—are some of the challenges that often create obstacles in the process of building a knowledge enabled population in a country like India—one of the largest countries in Asia. Apart from this, there are some other ground realities prevailing in India such as most of the people are deprived of their required livelihood in the Government as well as the private enterprises or establishments which is due to the lack of required skills and competencies. Again a major percentage of the people is general degree holders rather than professional and vocational skill holders or takers. This has led to an increase in the educated unemployment and also more than 90% population in India is engaged in the unorganized sector, which also indicates the poor level of Workforce Participation Rate (WPR) in various parts of India.

If we make a comparative study between India and Korea, it seems that in the context of education, mostly in tertiary education, India is lagging far behind compared to Korea where skill-based education has enabled the country to become the third largest economy of Asia and the thirteenth largest in the world as a manufacturing hub. Although India has a rich demographic dividend as 54% of population below the age of 25, and 66% people under the age of 35 (Census of India, 2011), it is pain stacking that at the all-India level; the adult (15 + years) literacy rate is 69.3%. For male,

it is 78.8% and for female, it is 59.3%. Again, if we throw light on the percentage of population with at least some secondary education above the age of 25 and older, it seems that there are huge disparities between the sexes in India as female constitutes 39.0% and male 63.5%. In addition to that, in case of Labour Force Participation Rate, the percentage of female is 27.2%, and of male it is 78.8% (HDR, 2018). This proves that there is a lack of adequate skills in the people, mostly the adult learners, for getting their required livelihood opportunities. It also proves that women have comparatively lower skilled learning than men.

In Korea however, in terms of population (age 25 and older) with at least some secondary education, female constitute 89.8% and male 95.6%, with the gap of about 5.8%. In fact, the disparity between the sexes in accessing education is bigger in India than in Korea. Again, in terms of Labour Force Participation Rate, in Korea, the female percentage is 52.2 and male 73.2, where it is seen that there are gender inequalities in terms of getting employment opportunities in both the countries to a great extent. Even in terms of Gross Enrolment Ratio (GER), there is a huge gap between India and Korea at the tertiary sector as Korea has more than 93%, whereas in India, the corresponding figure is only 27% (HDR, 2018). The course content, methodology of course delivery and the learning outcomes also determine the quality education system in a country to a significant extent. This situation also led the countries of the world to secure ranks as very high, high, medium and low human development countries. In 2018, India is in the 130th rank whereas Korea's rank is 22 among 189 countries in the world in terms of Human Development Index, which put India in the Medium Human Development category and Korea in very high human development category. This proves that compared to India, the rank of Korea is undoubtedly much better.

Therefore, for the greater interest of educating the 'oppressed' and deprived people in the country like India, there is the urgent need of using and adopting the latest trend of educational technology in order to suit the needs and demand of the knowledge hungry people. In this context, it is important to see how far a developed country like Korea and developing countries like India are able to sensitize the people about functional

literacy or to make them digitally skilled in the true sense. Are the quality educational opportunity and lifelong learning opportunities achieved by the people with the help of ICTs in equal manner? Is there any prevailing disparity among the people of rural and urban, haves and have nots etc. in terms of accessing education through ODL mode? How will the adopted model of the National Open University of Korea in terms of providing lifelong learning show the way to enhance skills in the young learners in the Indian universities offering education through the ODL mode? How asynchronous and synchronous technologies can be used for serving the purposes of the academic needs of the learners etc.? How the learners support services, including the study centres, play their role in the university like KNOU and how that could provide the best modalities for imparting distance education in post Covid 19 situations in India? Our main argument is that the technological inputs in teaching learning transaction in the study centres of KNOU can be the possible ways for providing sustainable and undisruptive learning services to all the learners irrespective of any disasters and hurdles in the open universities of India.

OBJECTIVES OF THE STUDY

In this research study, an attempt had been made to

- 1) Discuss how would the ODL institutions like KNOU and KKHSOU help in providing lifelong quality education to all by offering need-based courses.
- 2) Explain how ODL would help in providing equal opportunity to the stakeholders to access lifelong quality education in KNOU and KKHSOU.
- 3) Find out the state of online educational programmes in KNOU that could help in mapping the educational practices in KKHSOU.

Apart from the three main objectives, three other research questions will be used while conducting the study. They are:

- a) Are quality educational opportunities and lifelong learning opportunities achieved by the people through effective use of ICTs in equal manner in both the universities?
- b) Is there any prevailing disparity among the people of rural and urban, haves and have nots etc. in terms of accessing education through the ODL mode in both countries?
- c) How would the adopted model of the KNOU in providing lifelong learning through online courses enhance the skills of the young learners in the Indian universities?

METHODS

In this study, descriptive research methodology has been used. Description has been provided based on the data extracted from the secondary source of information. The sources like Report of Census 2011; Human Development Report, 2018; Economic Survey, 2016; World Development Report 2018; University Grant Commission Regulations, 2016 etc. KNOU and KKHSOU have been selected for the Inter-Institutional Study in this chapter. The analysis has been done based on the available information in the university data sources of KNOU and KKHSOU. Apart from the available secondary data, information was collected from the experts of KNOU through face-to-face interviews when the author was in KNOU for conducting research under the Association of Asian Open Universities (AAOU) International Faculty Exchange Programme in the month of April 2019.

DISCUSSION

Role of KKHSOU and KNOU in Creating the Knowledge Movement

The North Eastern region of India, which comprises eight states, share about 4% youth in India in the age group of 15-35. However, this region

faces lack of development due to culmination of various factors like insurgency, ethnic violence, infrastructural bottleneck, geographical isolation, lack of trained workforce, slow pace of industrialization, peripheral mode of production etc. The region's proportion of unemployed youth is relatively higher and it is almost double as compared to the national average. According to a Study, between 2011 and 2022, the region will create only 2.6 million jobs, but 17 million job seekers during the period. Therefore, a holistic approach for developing skills as well as need based skill training is the utmost necessary for the need of the hour. Therefore, the higher educational institutions of the region should play the prominent role for achieving the holistic development for the region as well as the country as a whole.

With the mission to provide access, equity, and quality education to a vast majority of people, KKHSOU—the lone state open University in the North Eastern part of India, has rendered a significant impact on the educational landscape of a state like Assam in its ten years of existence. This university has played bigger responsibilities in a technology-aided educational environment to educate people for sustainable development. KKHSOU has played a leading role by enrolling over 3,00,0000 learners in different disciplines since its inception in 2006. With the motto “Education Beyond Barriers” the University has been aptly functioning in accordance with the sole objectives of providing quality education at the doorsteps and reaching the unreached without any barriers of age, academic background, time, and geographical boundaries. Because of the inherent flexibility in terms of pace and place of learning, methods of evaluation etc., KKHSOU holds the promise of providing equal opportunities of higher education to all, bringing into its ambit the deprived and denied sections of the people of the state as well as fresh and new learners.

The Korea National Open University (KNOU), established in 1972, is the first and largest distance learning institution in South Korea. It offers lifelong education to working adults through its different available programmes. It offers over 800 different courses a year. Yang, C.Y. (2010) has provided an overall picture of the University. He has stated that the founding vision of KNOU was as the “Open University in Lifelong

Society.” KNOU’s role as an open lifelong educational institution is becoming greater than ever, representing a renewable source of the information and knowledge demanded by the 21st century society. KNOU advocates open learning principles leading to the lifelong learning society of the 21st century under three important mandates: *Distance education* specialising in learning methods; *Lifelong Education* that is open to all people; and *Public Education* that promotes lifelong learning opportunities to all. Since its establishment in 1972, KNOU has produced approximately 2,827,164 (cumulative) until 2019.

If we see the enrolment trend of different courses it seems that KNOU has been able to motivate learners in a huge rate as on April 1st 2019, it was seen that there were 106,828 enrolments at undergraduate programmes and 2,259 at Graduate Programmes. In fact, in Korea, which is an industrial economy, the need of education is basically related to the development of the professionalism of the learners so that they are able to develop their productivity as well as their knowledge, which shall further help them immensely in their employment. Students enrolled at KNOU come from all occupations, from homemakers to lawmakers, teenagers to senior citizens, from Seoul citizens to Jeju islanders and so on. Because the learners can study anytime, from anywhere, they can pursue a higher academic career while also progressing in their social career. From this, it may be assumed that KNOU has played a pivotal role in imparting higher and lifelong educational opportunities to those previously excluded from the formal education system for reasons related to social, economic, age, and time limitations. According to EFA National Report Republic of Korea, 2015, the national vision of the university is to enhance women’s economic activities offering some need-based courses mostly through online mode.

As a nascent open university of India, KKHSOU too has brought under its ambit such deprived section of population as—the dropped out learners from schools and colleges; the women getting married early and discontinued their education in schools and colleges; those working in offices and industries without completing degrees, diplomas required for their professions; housewives who simply could not carry on their studies in the conventional system on time and now desirous of pursuing education

and so on. Besides, the ODL system has enabled the in-service persons or professionals to enhance their skills, qualifications and training while on the job. Thus, with a view to making higher education more and more accessible, KKHSOU has been preparing its diverse academic programmes to suit the potential learners through about more than 300 access points (Study Centres) in the Indian state of Assam. Most of the study centres are located in rural and remote areas. This has confirmed that a university is a public property, and that it can take bigger responsibilities in encouraging the 'pedagogy of the oppressed' in a technology-aided educational environment.

Besides, KKHSOU also made some plans or policies by facilitating the Recognition of Prior Learning under National Skill Qualification Framework (NSQF) through which people irrespective of their age, sex, and geographical distance can get formal recognition of their traditional skills so that they can use these kinds of informal skills into a productive form. The NSQF also helps alignment of the Indian qualifications to international qualifications in accordance with relevant bilateral and multilateral agreement. In this connection, in order to make this university a truly people's university, the various educational interventions in the forms of online courses used in Korea National Open University would surely guide and help in adopting similar initiatives in KKHSOU.

After the Independence from Japan in 1945 and mostly following the Korean War in 1950's, reforms were made to generate the employment opportunity to the people of Korea where the basic focus of the government policy was to give the vocational training and retraining to the people than providing the university degree and certificates. By acknowledging the vocational aspects, KNOU was established in 1972 as a faculty branch of Seoul National University and in 1982, it became as a full-fledged National Open University in Korea. Today KNOU is one of the top ten mega open universities of the world. KNOU is the largest educational institution in Korea in terms of enrollment. It provides degree and non-degree programmes for the learners and also provide plenty of opportunities for both the fresh and the re-enrolling learners in Korea as a whole. In Korea, the basic objectives and vision of the educational

institutions are mostly to offer vocational and need based educational programmes as per the country's requirement. Korea, as an industrial country, has laid basic focus on producing work force who could easily be adopted with the demand of the industries and companies.

INTER INSTITUTIONAL STUDY OF KNOU AND KKHSOU

If we make a detailed case study of both the Universities, it seems that KKHSOU is a state open university whereas KNOU is the largest national Open University of South Korea that suits the needs of the learners as per their industrial requirements. Here, we can also refer to the educational programmes of KNOU. With an affordable tuition fees, KNOU has also contributed to the cultivation of human resources. It is ranked 4th in National Outstanding People DB, 6th in producing senior public officials and 1st in turning out heads of the basic local governments. Let us now have a look at the prevailing status of KNOU as well as its academic programmes and schools in the following Table 1.

The information provided in Table 1. shows that KNOU not only provided ICT-based programmes to the learners but also helps them to gain knowledge and information from the OERs that eventually enable them to gain knowledge as per their job requirements and demand as well as livelihood requirements.

In India, there is huge gender disparity. This is because, in different corners of India, women are deprived of higher education compared to men and this challenge could be sorted out only by putting the efforts of the ODL system in India. For instance, in Assam, KKHSOU is able to motivate more female learners than male in pursuing general higher education i.e., at both undergraduate and post graduate levels. Besides, along with the people living in the plain areas, even those belonging to remote and hilly terrains, could also find access to the benefits of education by using online technology or devices in getting admission and receiving academic materials and supports available in the university website and other important portals.

Table 1. KNOU as per the year 2019

KNOU: Basic Information	4 colleges with 23 Departments
	One National Open Graduate School-18 Departments.
	One Prime College that offers 100% online lifelong courses.
	Graduate school of Business Administration offers Graduate Courses (8 majors).
	13 Regional Campuses.
	34 Study centres under Regional Campuses.
	660 courses offered as academic programmes.
	145 full-time teaching faculty and 800 non-teaching staff.
	54 media production specialists.
	KNOU press-nationally reputed in Korea.
	Web based programmes for the learners. For instance, KNOU produced 49 TV based programmes, 2 web based programmes and 314 multimedia programmes in a year on 2017 only.
	Faculty of the KNOU headquarters are mostly engaged in producing the web-based programmes.
	In terms of Gender, it seems that more than 68% are female learners.
Best Facilities of KNOU provided to the Students	Convenient Smartphone-PC lectures.
	Generous Scholarship to the students.
	Campus life everywhere in South Korea.
	Network Power with 800 thousand KNOU alumni.
	Functional training under the Hub University of 'work first, study later'-designated by Ministry of Education.
Learning Support Services of KNOU	KNOU helps the students to study with various learning support services, which is also known as the diversified ways of learning.
	Tutoring: Tutors support individual learning by providing study guidance, mentoring and advising.
	Mentoring: Mentors who are seniors at KNOU guide and support campus life of newly transfers students. There may be 10-20 students per senior faculty of KNOU.
	Student Support Services Centre where professional advisors offer counselling service on academic affairs, human rights, career development and mental and physical health.
	Library and computer lab: student can use 48 libraries and computer labs nationwide, including the central library at the headquarters.
	Teaching assistant provides the customised learning support and give the guidance on academic schedule.
	Day care centre or the nursery school for the kids of the students.
Method of Learning Delivery in KNOU	KNOU provides blended learning to the students with high quality educational programmes running through online and offline classes.
	Classroom lectures in face-to-face mode for some subjects are offered, but in some cases where the attendance of the students are not feasible, then 100% online learning facility is also available.

Table 1. (Continued)

	<p>Even there is a used of Mobile learning as a device of transmitting the contents to the learners.</p>
	<p>U-Knou campus provides about 1000 of KNOU course and various free contents. Students can access the content and learning materials by using Personal Computer in his or her own place.</p>
	<p>KNOU TV (OUN), which is lifelong educational channel of KNOU, transmits or provides various educational contents to all citizens in Korea. In fact, in 2011, KNOU acquired ‘ISO 9001 Certification’ in “Digital Contents Development and Quality Assurance” from British Standard Institute, which is the first and the only case in Korea.</p>
<p>Prime college of KNOU offer lifelong learning opportunities to the learners in Korea</p>	<p><i>Prime college</i> of KNOU opens and operates education course for vocational competency and improvement of job competency of the workers, job applicants and people-getting job first and studying. The basic objective of the course is to develop the knowledge, skills and attitudes of the learners that will be applied in the industrial sites, besides improving the liberal arts knowledge of the workers.</p> <p>The course is run through 100% online. Under the prime colleges, there are some lifelong education hub course like basic course on employees, corporate university course, partner university course, consigned course, multicultural ethnic course for Korean Refugees Support Procedure.</p> <p>For giving or delivering the course to the learners, the faculty of the prime colleges have been developing e-content or web based video programmes, developing the e-learning environment setting, e-content related to the program, guide manuals for the first time users and providing the answers to the learners under FAQ etc.</p>

As an open university, KKHSOU is not only striving hard to identify the needs of various stakeholders, but is also trying to ensure sustainable living by taking so many altruistic initiatives besides offering many need-based programmes like producing audio-visual contents on areas like agriculture, small scale industries, mobile phone repairing and so on. The university has also been producing important OERs in the local languages to meet local requirements. A number of educational audio-visual programmes are uploaded in YouTube that can be accessed through the university’s YouTube page: <https://www.youtube.com/user/kkhsou>.

Table 2. KKHSOU as per the year 2019

KKHSOU: Basic Information	6 schools, 19 Departments, 1 Regional centre and 300 Study centres.
	One Research Institute i.e., BKRI, where all research activities are undertaken.
	CIQA: Developing ICT, Faculty, Learner’s Support System, Examination reforms etc.
	Certificate programmes: 4
	P G Diploma and Diploma Programmes: 12
	Bachelor’s Programmes: 15
	Master’s Programmes: 4
	M Phil: 17 (Total)
PhD: 81 scholars total (19 were awarded)	
Best Practices at KKHSOU	Free education to the differently able learners. KKHSOU has been developing the learning materials in the format of Braille system and audio programmes in CD format for blind learners.
	Through “Mother Teresa Social Welfare Mission,” five relatively very backward tribal villages of Assam were adopted from 2016 onwards where free health camp, digital training on basic computer have been organised from time to time.
	Free education to the jail inmates across the State as well the transgender learners.
Learning Support Services of KKHSOU	Community Radio Service (CR): “Jnan Taranga” (90.4 MHz) is an important platform for the broadcast of educational programmes, which include debates, discussions and talk shows. The i-Radio can also be accessed through the URL: http://jnantaranga.kkhsou.in/iradio/
	Ekalavya: KKHSOU with the help of Prasar Bharati, India has launched a special educational programme named ‘Ekalavya’, which is aired every Saturday from 8.00 PM to 8.30 PM through All India Radio, Guwahati and Dibrugarh.
	Akashvani Phone-in Programme: KKHSOU offers one hour live phone-in programme every Thursday from 9.15 AM to 10.15 AM through AIR, Guwahati and Dibrugarh where officers and experts from the University clarify queries put across to them over telephone.
	e-SLM: This serves as the digital repository where e-study materials are uploaded for the benefit of the learners. e-SLMs can be accessed through eslm.kkhsou.in .
	KKHSOU Digital Library: This acts as the resource centre for the University. The Digital Library at Krishna Kanta Handiqui State Open University is an online locus for collecting, preserving and disseminating the institute’s output to the Global community. URL: http://dlkkhsou.in/ilibnet.ac.in/
	KKHSOU is also launching the university’s Learning Management System (EBidya Learning Management System) that will focus on giving online learning opportunities to the enrolled learners of the different courses of the university at the undergraduate and post graduate levels.

Although there is a Governmental mandate to all the Indian universities (both conventional and ODL) for mobilising the online educational programmes in order to ensure better access to education, until now, KKHSOU has not run any programme under the SWAYAM platform which is supposed to provide lifelong learning opportunities to the learners of the country.

SUMMARY OF THE FINDINGS

After doing the detailed study on both the Universities, it has been found that KNOU is a highly techno-based university whereas KKHSOU is limited to offering a very few online programmes to the learners. In India, although various initiatives are in place for making India ‘digital’, there is a lack of governmental intervention in terms of providing the internet based infrastructure in the whole nation. There are some places located particularly in villages or rural India where electricity is still a far cry for the people living in those areas. In this situation, how we can expect to provide the 100% online courses to the learners is a serious matter. As of now, KKHSOU is limited to provide online opportunities related to taking admission, accessing information through the university Learner’s portal, Internet based radio, some academic programmes available in the university’s YouTube and so on. However, KKHSOU is also launching the university’s Learning Management System (LMS) that will focus on providing online learning opportunities to the enrolled learners of the university at the undergraduate and post graduate levels.

Thus, if we look at the academic set up of KKHSOU, particularly the present state of online programmes, it seems that KKHSOU is still in a nascent stage in terms of offering the online programmes to the learners in comparison to KNOU. In KNOU, MOOCs are offered through the virtual university of Korea. KNOU provides courses which are 100% online, which are not considered MOOCs. Instead of MOOCs, the term online course for the lifelong learners looks more appropriate in the context of

Korea. The prime colleges play a crucial role for providing the training and re-training to the learners or the employees in Korea.

Regarding the enrolment of female learners, both the universities are able to motivate more female learners than male. However, the dropout rate is a big issue of concern for both the universities. It seems that in KNOU, there is no gender discrimination and none of the gender specific course is offered by KNOU. In KNOU, learners can use the diversified ways to access the information, but in terms of KKHSOU, it has seen that about 80% learners use the mobile application for accessing the online materials and e-based materials. 75% learners are the age group of 20-45 in KNOU and most of them (about 80%) are working, and at the same time, they are learning there courses in KNOU. In KKHSOU, the age group of majority of the learners is from 24 to 34. Finally, it should be mentioned that KKHSOU, which is only 13 years old, has to do many things in order to meet the needs and requirements of the stakeholders so that it can emerge as the people's university in the true sense.

Due to the COVID 19 Pandemic, the entire educational systems across the world has been affected as the educational institutions were closed down, although for a few months. Eventually, millions of students lost their academic years, missed direct or physical learning facilities, direct contact with the teachers or the counsellors and peer learning opportunities etc. However, the impact of the Pandemic is obviously lower in case of the KNOU than the other conventional and open universities in India. This is because, in a country like Korea, online technologies have already been playing a dominant role and for which the learners are able to access educational learning opportunities compared to India. However, the Covid 19 situation compelled India to use and adopt different online learning platforms for teaching learning transactions. However, KKHSOU, continued using and adopting the online and blended form of learning for disseminating knowledge and delivering the course contents to the learners of the state even during the nation wide Lockdown caused by the Covid 19 pandemic. The re-designing the counselling sessions which is operated from the headquarters, mentoring facilities for the individual care to the learners, live classes from the faculty members of the university are some

of the best practices which were implemented during the Covid 19 and post Covid 19 situations in KKHSOU. However, the important point here is that such practices were already in place in KNOU.

CONCLUSION

At the present knowledge society, we need such kind of people who have the capability to adapt with the situation which is fast changing in nature. Lifelong learning opportunity can provide the necessary inputs to the people for enriching their knowledge and skills so that they may lead a meaningful and productive life in the society. Besides at the present techno-pedagogical world, for making education accessible to all, there is a need of using non-discriminatory and inclusive pedagogy for transacting the knowledge to the learners in an equitable way. The proper applicability of online learning in the true sense would justify the presence of an equitable society for all. OERs and MOOCs in blended as well as online format have tremendously influenced the teaching learning transactions in the digital age. Thus, a new type of social constructivism has been formed where a learner can directly interact with the people in the community, share their own ideas and thoughts and collectively undertake the new researches which can genuinely transform the society. The university like KKHSOU should adopt many of the innovative ideas from a world-class university like KNOU in terms of delivering and designing the online courses, the ways of providing lifelong learning opportunity etc. In fact, KNOU can pave the way for educational developments through certain collaborative activities with the open universities and dual mode institutions of India in delivering and designing the lifelong learning courses to the learners of India so that a sustainable environment for living can be put in place for the people of India.

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SECTION B.
OPEN LEARNING:
SOME COUNTRY SPECIFIC EXPERIMENTS

Chapter 7

**SKILL BASED HIGHER EDUCATION:
PROSPECTS AND CHALLENGES
IN THE CONTEXT OF INDIA**

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ABSTRACT

This chapter gives an overview of the present scenario of skill development through higher education in India. In today's competitive world, skill development has become an imperative for earning one's livelihood through either employment or entrepreneurship. It has been found that the employability skills in the millions of individuals in India are extremely low. This has called for efforts by the various government agencies to come forward with initiatives to foster skill development in

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the country. This chapter examines this scenario and analyses the issues and challenges related to skill development in a country like India. Based on the analysis, recommendations are provided to reduce the challenges in the way of skill development through higher education.

Keywords: skill development, higher education, employability, entrepreneurship, hard skills, soft skills, traditional skills

INTRODUCTION

It is estimated that about sixty-two per cent of India's population (802 million approx.) is in the working age group (MSDE, 2015). About fifty per cent of India's population (650 million approx.) is less than 30 years of age, which constitutes about twenty per cent of the world's workforce (Sachan, 2016). This huge human resource has immense potential to become an asset for India and contribute to its all round growth and development. This precious human resource could become an asset not only for India, but also for the other countries as well. For this to happen, India's young population needs to be equipped with the necessary skills and knowledge.

Higher education in India could play a vital role in equipping this population with the necessary competence that would lead to their eligibility and employability, thereby earning their livelihoods. A well-orchestrated effort by the higher education sector could impart the necessary skills and knowledge. Indeed the possibilities are many. There are the following considerations that indicate a favourable environment for imparting and fostering skills through higher education.

- First, there is a huge need for skill development in the country.
- Second, there is a huge market, both nationally and internationally, for the skills.
- Third, there is a government will to skill the Indian population and launch policies to substantiate this will.

- Fourth, the necessary sectors for skill development have been identified.
- Fifth, the higher education sector has been gearing up for imparting the necessary skills through various vocational courses and programmes, an ensuring certification and lateral or upward movement in academic qualification levels.
- Sixth, entrepreneurship based on acquired skills is being encouraged and facilities for startups are being provided by the government.

However, there are many challenges to meet on the way. To understand the magnitude of the issue in question, an example is provided here. In 2010, it was proposed through the National Policy on Skill Development to train about 12 to 15 million persons annually in vocational skills. It highlighted that 112 million persons until 2022, i.e., over 8 million persons annually, were required as the trainers to train 15 million persons annually (NSDC, 2010). There are other associated challenges, which may be envisioned in the following way.

- First, the reach of skill based programmes through higher education needs to be extended to the remote parts of the country.
- Second, the teachers trained for imparting skills are inadequate in number to cater to such a huge population, and therefore more teachers need to be trained in this sector.
- Third, local traditional skills need to be identified and imparted so that these useful skills coming down the centuries are not lost.
- Fourth, various opportunities for employment and entrepreneurship based on the skills acquired should be identified, created, facilitated and used by the society and government to absorb the skilled workforce.

The following sections explore the above considerations of the various possibilities and the envisioned challenges of offering skill based higher education in the Indian context.

METHODS

This is an exploratory research on skill development in higher education in India. The study employs secondary data sources from government reports, surveys and research papers to examine the present scenario of skill development through higher education in India to provide a preliminary analysis. The analysis will provide an understanding of the issues and challenges and allow suitable recommendations to be made.

THE NEED FOR SKILL DEVELOPMENT

Skills and knowledge drive economic and social development of any country. Available evidence (ILO, 2010) firmly establishes that a good set of skills and knowledge

- 1) Empowers people to develop their full capacities,
- 2) Empowers people to seize employment and social opportunities,
- 3) Raises productivity, both of workers and of enterprises,
- 4) Contributes to boosting future innovation and development,
- 5) Encourages both domestic and foreign investment, and thus job growth, lowering unemployment and underemployment,
- 6) Leads to higher wages,
- 7) Expands labour market opportunities and reduces social inequalities.

The countries with a population of highly skilled human resource are able to better cope up with various challenges in the way of their development. However, in the Indian scenario, in the past few decades, there has been a migration of labour from the primary sector of agriculture to the secondary (manufacturing) and tertiary (services). The secondary and tertiary sectors require different set of skills compared to the

agriculture sector. There is a huge skill gap in these secondary and tertiary sectors (IMaCS, 2010).

A study carried out by the British Council (2016) reported that out of the 150 million workforces in India between the ages of 20-35, 31.5 million were illiterate, 63 million were under matriculation, and 37.5 million were below graduate. Only 1.5 million had a technical diploma or certificate, 13.5 million were graduates and only 3 million had a postgraduate degree. According to a survey in 2013 of 60,000 graduates surveyed in India, 47 per cent were unemployable due to their insufficient communication and cognitive skills (Aspiring Minds, 2013). The 12th Plan of the Government of India states that In India, only 5 per cent of the population of 19–24 age group has acquired some sort of skills through vocational education (Planning Commission, 2013, p 69).

Evidently, these studies indicate the dire need of skill development among the working population in India.

WHAT ARE SKILLS AND WHY ARE THEY IMPORTANT?

Skill is defined by the Business Dictionary as the “ability and capacity acquired through deliberate, systematic, and sustained effort to smoothly and adaptively carryout complex activities or job functions involving ideas (Cognitive skills), things (Technical skills), and/or people (Interpersonal skills)” (Business Dictionary, 2018).

- 1) **Cognitive Skills:** Cognition is the way the brain acquires knowledge and understanding. The cognition process includes thoughts, experiences and senses. Cognitive skill is the ability of a person to remember, understand, apply, analyze, evaluate and create (Anderson, 2001).
- 2) **Technical Skills:** Technical skill is the ability of an individual to perform tasks related to his/her core subject that s/he has studied, for example engineering skills, computer skills, pharmacy skills etc. These skills are useful both in the workplace and in pursuing

higher education. These skills are learnable, demonstrable and measurable. These types of skills are also called hard skills (Jefferson State University of New York, 2016).

- 3) **Interpersonal Skills:** These skills are personal attributes that are critical in an individual's job performance. These skills are non-technical and are important for dealing with other people. Some examples of interpersonal skills are listening skills, communication skills, problem solving skills, collaboration, human relation skills, ethics, etc. (Hagen & Bouchard, 2016).

Skills can be acquired, and acquisition of skills needs special training and practice. Hard skills are the capabilities to perform a specific job, such as to control a machine, or fabricate a component. Soft skills, on the other hand, are the competencies that are not directly related to the task, but are related to relationships with other people in an organisation (Cimatti, 2018). Development of both the hard and soft skills is required among the Indian workforce. Without the necessary skills, a huge part of the population will remain unemployed. Table 1. lists some of the skills required by the secondary and tertiary sectors of the Indian economy (Aspiring Minds, 2018).

Table 1. A List of Skills in High demand in the Indian Job Market

S. No	Skills
1.	English comprehension
2.	Deductive reasoning (general statements or premises are used to form a specific conclusion)
3.	Inductive reasoning (moving from specific instances into a generalised conclusion)
4.	Agreeableness (friendly/compassionate)
5.	Information gathering and synthesis
6.	Extraversion (outgoing/energetic)
7.	Ability to remain stable and balanced
8.	Quantitative ability

Traditional Skills

Other than the skills mentioned above, in the context of India, we could also refer to some of the traditional skills. These skills may be broadly classified into four categories as in the following:

- 1) **Agriculture and forestry skills:** Agriculture skills include the skills of growing crops and vegetables, animal husbandry, apiculture, irrigation, fertilising the soil, keeping the farm disease free, etc. The use of locally available materials in a sustainable way has been practised for centuries in agriculture. The skills to use the resources have been passed down for generations. Forestry skills include sustainable use of forest resources without causing harm to the forest. Conservation of wild life and ecology and judicious collection of forest produce are the main skills in forestry.
- 2) **Construction skills:** Construction of houses, buildings, roads, dams, ponds and tanks, water channels and drains, vehicles, ships, etc. require special skills. Traditionally, the construction of the above-mentioned structures, involved long-established designs keeping into consideration the environmental considerations, and involved mostly the use of locally available resources.
- 3) **Manufacture skills:** The traditional crafts such as metalworking, shoemaking, pottery and bricks, woodwork and weaving, gems and jewelry, traditional medicine, perfumery, etc., require special manufacturing skills. A range of skills to make household items such as baskets, personal clothing, and processing and storing food may also be considered in this category.
- 4) **Skills in tertiary services:** Tertiary services included professions, such as teaching, physician, scribe (writer), hospitality and transport, the fine arts and entertainers that require highly developed skills in the respective areas.

Both the modern and traditional skills are not only useful for the Indian scenario, but also for the international scenario. Having discussed the skills, we now move on to the skill development efforts scenario in India.

SKILL DEVELOPMENT INITIATIVES IN HIGHER EDUCATION

The Department of Higher Education, Ministry of Human Resources and Development (MHRD), Government of India has identified certain skills to be imparted to the population of India. The MHRD, through policy and planning, caters to the overall development of the Higher Education sector. Through universities, colleges and other institutions, the MHRD provides access to high quality education to the masses.

National Education Policy 2016

The draft National Education Policy 2016 has recognised the importance of skill development in higher education and links it to employability and entrepreneurship. The policy aims towards “expanding opportunities for acquiring relevant skills, including skills needed for work and entrepreneurship; skills and competencies that allow learners to be more creative and innovative, to think critically, to communicate effectively, to solve problems independently; and life skills that enable individuals to grow as responsible citizens” (MHRD 2016).

National Scheme of Apprenticeship Training

In 1961, the Apprentices Act was enacted following which the Ministry of Education (now MHRD) had introduced the Practical Training Stipendiary Scheme (PTS Scheme) for the engineering graduates and

diploma holders in engineering. Under this scheme, a select number of graduates and diploma holders were placed in industries for practical training on a monthly stipend. In 1969, for regional Boards of Apprenticeship Training (BOAT) were set up to streamline this scheme. The Act mandates that the industries regularly engage engineering graduates and diploma holders for apprenticeship (Annual Report, 2017a). Till date, there are 162 areas of engineering and technology under which the apprentices are engaged (Annual Report, 2017b, p 41-43). In 1986, vocational pass outs from higher secondary were also included in the scheme (Annual Report, 2017a). There are 137 subjects in this area (Annual Report, 2017b, p 45-45). This scheme, presently known as the National Scheme of Apprenticeship Training, involving 13012 industries and 2244 institutions, has benefitted 707095 apprentices (MHRD, 2018a).

University Grants Commission

The University Grants Commission, under MHRD, is the statutory agency for the coordination, determination and maintenance of standards of university education in India. Some of the conventional and open and distance learning universities under UGC have already been offering skill development courses in the form of vocational education. The UGC has taken steps to approve the pertinent skill development courses in these universities. The UGC has further offered four new schemes for skill development. The statutory body also recognises the skill development courses offered by other statutory professional councils.

Universities Offering B.Voc Programme and Other Vocational Courses

The UGC has approved 127 colleges all over the country already offering B.Voc courses (MHRD, 2018b). The trades approved are diverse, ranging from renewable energy management to food processing to

software development. The State Open Universities also offer a wide range of vocational courses. For example, Netaji Subhash Open University (NSOU) offers courses in needlework and knitting, hospital front office management, and fire safety skills and security management. Similarly, Bhim Rao Ambedkar Open University (BAOU) offers courses in wellness management, fire, medical and motor insurance, and food and nutrition. The Indira Gandhi National Open University (IGNOU) offers postgraduate diploma, diploma and certificate courses in several vocational courses, such as communication and IT skills, information security and pharmaceutical sales management (SOVET, 2018).

Skill Development Bureau

The UGC established a Skill Development Bureau and in collaboration with the National Skill Development Corporation (NSDC), it is offering four schemes namely, Community Colleges, B.Voc Degree Programme, Deen Dayal Upadhyay Centres for Knowledge Acquisition and Upgradation of Skilled Human Abilities and Livelihood (KAUSHAL) and Career oriented courses (UGC, 2018a).

- 1) **Community Colleges Scheme:** The Community Colleges Scheme offers skill development to the undergraduates to move directly to the employment sector. The UGC has approved 150 community colleges (MHRD 2018b). A total of 89 trades for this scheme have been identified in an indicative list published by the UGC (UGC 2018b). The Scheme is designed with 40 per cent general education and 60 per cent vocational skills component. There are three types of courses, (i) Certificate (6 months), (ii) Diploma (1 year) and (iii) Advance Diploma (2 years). The students have the option of multiple exits at each level. The pass-outs can also move up a higher qualification level. The scheme aims to offer skill-based programmes of different durations depending upon the needs of the local industry. The certification will be done as per the

National Skills Qualification Framework. The NSQF is described in a section below.

- 2) **B. Voc. Degree Programme:** The Bachelor of Vocation Programme is offered to undergraduate students in universities and colleges. A total of 103 trades for this scheme have been identified in an indicative list published by the UGC (UGC 2018c). Students with 1 year Diploma or 2 years Advance Diploma in Community College Scheme can get admission to the 2nd Year and 3rd Year of the B. Voc. Programme respectively. The Programme is designed with 40 per cent general education and 60 per cent vocational skills component. Multiple exit points are available in this Programme. Students can exit after one year with a Diploma and after two years with an Advance Diploma. The certification would be done as per the NSQF guidelines.
- 3) **Deen Dayal Upadhyay Centres for KAUSHAL:** The UGC has proposed to establish 100 Deen Dayal Upadhyay Centres for Knowledge Acquisition and Upgradation of Skilled Human Abilities and Livelihood (KAUSHAL). The centres are envisioned to run specialised skill-based programmes and vocational programmes from the Certificate level to the Post Graduate and Research Degree levels. A total of 79 trades for this scheme have been identified in an indicative list published by the UGC (UGC 2018d). The certification would be done as per the NSQF guidelines.
- 4) **Career oriented courses:** This scheme aims to introduce market-oriented courses as add on courses to an already ongoing graduation course in universities and colleges. This is mainly for the undergraduate students. The objective is to empower the students with the necessary employability and entrepreneurship skills.

SKILL DEVELOPMENT INITIATIVES BY STATUTORY PROFESSIONAL COUNCILS

In addition to the universities and colleges under the UGC fostering skill development, there are other institutions governed by professional councils that impart skill-based higher education in India. These professional councils are recognised by the UGC. There are a total of 14 such councils (UGC, 2018e). Some of these are the All India Council of Technical Education (AICTE), Indian Council for Agricultural Research (ICAR), Indian Nursing Council (INC), Rehabilitation Council (RCI), Medical Council of India (MCI), Bar Council of India (BCI), State Councils of Higher Education (SCHE) etc. These councils regulate the Institutes and Universities offering courses in engineering and technology, computer application, business administration, pharmacy, architecture, applied arts, hotel management, catering technology, medical and nursing education, agricultural sciences and extension, teacher education, law, etc. These institutions offer mostly higher order skills in the above mentioned subject areas.

MoU with National Skill Development Corporation

The National Skill Development Corporation (NSDC) India is a non-profit company set up by the Ministry of Finance. It aims to promote skill development through creating large, for-profit vocational institutes. It implements specific schemes of various ministries, such as the Pradhan Mantri Kaushal Vikas Yojana of MSDE and Udaan of the Ministry of Home Affairs. Presently, it focuses on the skill development of 21 sectors and had 413 training partners drawn from various private sector companies and industries (NSDC, 2018). The NSDC works closely with the Sector Skill Councils. These Councils play a crucial role in the skill development ecosystem of India. At present, there are 35 Sector Skill Councils and 3 upcoming ones. These councils are responsible for developing a model

curriculum, which includes National Occupational Standards (NOS) and Qualification Packs (QPs) for each skill. The draft of the NOS and QPs developed by the Sector Skill Councils are available on their websites for one month for feedback and comments. After a month, these feedback and comments are incorporated into the curriculum draft to finalise it and implement. Certification of the trainees is done by the Sector Skill Councils (Sector Skill Councils, 2018).

The UGC had entered into a Memorandum of Understanding with the NSDC on 4th August 2014 for skill development in the community colleges (UGC, 2014). The agreement has also been done to align UGCs B. Voc Degree Scheme to the NOS developed by the Sector Skill Councils. The Sector Skill Councils will do the assessment and certification of the skill part of the B.Voc Degree course.

National Skills Qualification Framework

The National Skills Qualification Framework (NSQF) is anchored in and operationalised by the National Skills Development Agency (NSDA), Ministry of Skill Development & Entrepreneurship (MSDE). The NSDA coordinates with all other Central Ministries and State Governments to harmonise the approach to skill development in the country (MSDE, 2018).

The NSQF is a structure of competency levels. This framework supersedes the National Vocational Education Qualification Framework of the MHRD. The NSQF defines the skills and organises them in different levels based on the learning outcomes. These levels are graded from one to ten according to complexity, knowledge and autonomy required to demonstrate the competence commensurate to that level. The learners are expected to possess these learning outcomes regardless whether these are obtained through formal, informal or non-formal learning.

Each qualification level has five domains. These are:

- 1) Process required: This is essentially the description of the job and the summary of the other four domains in the level. For example,

at level 1, the process is described as the skill level prepares a person to carry out processes that are repetitive on regular basis, whereas, at level 8 the process required is comprehensive, cognitive, theoretical knowledge and practical skills to develop creative solutions to abstract problem. Undertakes self-study, demonstrates intellectual independence, analytical rigour and good communication.

- 2) Professional knowledge: It is the depth (general to specialised), breadth (single topic to multidisciplinary) and kinds (concrete to abstract, segmented to cumulative) of knowledge and the complexity (various combinations of depth, breadth and kinds) of knowledge on a particular subject the learner is expected to know.
- 3) Professional skill: This includes the kinds (cognitive and creative skills, communication skills and interpersonal skills) and complexities (various combinations of the kinds) of the skills.
- 4) Core skill: It includes the basic skills involving dexterity and the use of methods, materials, tools and instruments used for performing the job. Information Technology (IT) skills are also included.
- 5) Responsibility: This includes the following characteristics of the learner:
 - a) Nature of working relationships
 - b) Level of responsibility for self and others
 - c) Managing change
 - d) Accountability for actions

The NSQF allows for vertical mobility to higher levels, and horizontal mobility within vocational education or between vocational, technical and general education. It aims to establish equivalence of certificates/diplomas/degrees. It also aims to recognize prior learning. It integrates credit accumulation and transfer. It also hopes to help the alignment of Indian qualifications with international qualifications (NSQF, 2013).

The educational regulatory institutions, such as the UGC and the statutory professional bodies are required to define their entry and exit

competencies and qualifications in terms of the NSQF levels to facilitate seamless access to learners across universities and institutions.

DISCUSSION

The Government faces the challenge to train 500 million skilled manpower by 2022 (Planning Commission, 2013). The breakdown of this unskilled population is as under (Nayan Tara & Sanath Kumar, 2016).

- 1) 12.8 million annually entering the labour market for the first time
- 2) 72.88 million employed in the organised sector
- 3) 387.34 million working in the unorganised sector

The difficulties in the way to train such a huge manpower through higher education in India are enormous. These range from a lack of infrastructure and training personnel to a lack of sustainable ecosystem of employability and entrepreneurship in the country. Some of the major challenges are described below:

- 1) Inadequate infrastructure: At present, there are 903 Universities, 39050 Colleges and 10011 Stand Alone Institutions catering to a total of 36.6 million students. The Gross Enrolment Ratio (GER) in Higher education in India is 25.8%, which is calculated for the 18-23 years of age group (DHE, 2018). The 12th Planning Commission document estimated that by the end of 2017, 50 million people needed to be trained in vocational skills. However, the existing annual training capacity in India is 4.5 million persons per year (Planning Commission, 2013, p 141-142). Clearly, mechanism to expand the training infrastructure to reach the unreached is urgently required.
- 2) Inadequate teacher trainers: For the year 2016-17, total number of teachers were estimated at 13, 65,786. The Pupil Teacher Ratio (PTR) was 30 (DHE, 2018). This is in case of the existing higher

education institutions catering to 36.6 million students. For training 500 million students, clearly, the teachers/trainers need to be hired at a huge scale. There is an acute shortage of trainers not only in the existing trades but also in the proposed new trades (Planning Commission, 2013, p 148). The hired teachers/trainers might need training themselves in relation to certain soft skills and associated areas (Sharma & Nagendra, 2016).

- 3) **Mismatch of skills demand and supply:** At present, the labour market faces a mismatch of skills demand and supply. On the one hand, the employer is not able to find a skilled person and on the other hand, there are thousands who might have the skills but are not able to get the job (Planning Commission, 2013, p 148). Skill inventory and skill maps need to be developed and made readily available.
- 4) **Skill gap:** The skills needed by the industry are not imparted through the higher educational institutes and this gives rise to the skill gap. Industry and academia need to work very closely to bridge this gap. The MHRD, UGC and NSDC should work very closely to develop and implement the NSQF.
- 5) **Motivation for skill development:** There is a lack of direction among the population as to which vocation would be suitable to them (Sharma & Sethi, 2015). Career counselling should be provided to the individuals based on their aptitudes and motivated to join the right skill development programme.

RECOMMENDATIONS

It is evident that the necessary mechanisms are being put in place by the Indian Government and higher education system to accelerate skill development in the country. With the passage of time, the results of these efforts will become evident. However, a few recommendations are made to further reduce the challenges in the way of imparting skills in India.

- 1) Leveraging the Open and Distance Learning (ODL) System: The ODL system in India comprises 15 State Open Universities and one National Open University, the Indira Gandhi National Open University (IGNOU). With its openness and flexibility, the ODL system has an enormous capacity of enrolling millions of individuals whose skills need to be upgraded. The ODL systems have already been imparting several skill-based courses. The infrastructure of the ODL system has the in-built mechanism of tie-ups with conventional colleges, laboratories, training centres, etc., which enable hands on skill development of the learners. The IGNOU has about 3 million students on its rolls operated through about 67 Regional Centres and more than 3000 study centres all over the country. Clearly, its wide reach indicates its potential to cater to the millions of potential learners. The ODL systems should be leveraged optimally for the skill development of the millions of unskilled people in India.
- 2) Identifying local skills: India is a vast country with a diverse cultural milieu. It is rich in traditional knowledge and skills. These skills are linked to the local environment that might require the use of locally available materials. Efforts should be made to identify local skills in each state and the local people should be trained in those skills. These skills should also be made to all interested at a national level. This would ensure the economic development of the region, and at the same time, the dying traditional skills would be revived and preserved.

CONCLUSION

Skill development is indeed the need of the hour in India. The higher education system is doing due diligence in this regard by developing appropriate policies, making provisions for funds to develop the necessary infrastructure and encouraging industry-academia linkage. There are several challenges and the major challenge is the sheer number of people

who need skill development. Educational mechanisms do exist for imparting skill development, but these are inadequate and need to be developed in terms of quality, quantity, access and equity. Efforts are ongoing at a fast pace as the present government considers skill development a priority. It is hoped that with all the efforts and due diligence, it will be possible for the higher education to impart the necessary skills to a large part of the Indian population in the near future.

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Chapter 8

**ODL IN MALAYSIA:
CURRENT PERSPECTIVES AND CHALLENGES**

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ABSTRACT

The chapter discusses various issues and challenges related to Open Distance Education in the context of Malaysia. Six major features of distance education in Malaysia could be identified which include: 1) Programmes created in institutions of higher education in Malaysia are based on the principles of Outcome Based Education (OBE) as stipulated by the Malaysian Qualifications Agency (MQA). MQA regulates these institutions to ensure that the graduates are capable and relevant to the

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needs of the industry. 2) The rigorous process of programme development, delivery and assessment are based on programme standards given by MQA. This is to ensure that each graduate is equipped with the foundation of the knowledge, which they have studied and are assessed fairly. 3) Well defined provisions by MQA to recognise the prior experiential learning of students for credit transfer to an intended programme. This would facilitate the reduction of duration of completion for a programme and instil the sense of worthiness to the experiences gained by the students. 4) Provision for transfer of credits earned by active participation in MOOC and Micro-credential courses are also a form of recognition of prior experiential learning. The flexibility of MOOC allows the students to gain knowledge from alternative form of sources and Micro-credential allows students to complete recognised targeted knowledge in a short duration, which are both economical and time-saving. 5) Constructive alignment of course learning outcomes to course delivery and students' assessment is the backbone of OBE. This ensures that the aim of a course is related to the activities taught which in turn is assessed to ensure that the aims are achieved. 6) Strict quality maintenance of programmes and auditing by MQA. This assures all MQA accredited programmes are of quality and relevant to the needs of the ever-changing society. Each of these features is explained in more detail. Furthermore, this chapter discusses the challenges faced by the open universities in terms of retention and graduation of students, declining enrolment numbers, students' assessment and competition due to multiple players in the industry. This chapter also discusses the probable ways of meeting these challenges.

Keywords: open distance education, students' assessment, Malaysian Qualifications Agency, programme development and delivery, assessment, credit transfer, outcome based education

INTRODUCTION

Higher education has emerged as a competitive industry in developing countries such as Malaysia. Various institutions of higher learning have been established in Malaysia since the liberalisation of higher education in 1996 under the Private Higher Education Institutions Act 1996 and the National Accreditation Board Act 1996 (Asari et al. 2017) and the open universities in Malaysia were established the following years. The

establishment of open universities gave access to many people to pursue their studies in higher education who otherwise would not have been able to for various reasons. Accreditation of Prior Experiential Learning (APEL) which was started by MQA and administered by the open universities allowed people to leverage on their working experience to enter and complete their studies in higher education at a shorter time period. This also made the open distance education mode offered by open universities the University of Choice.

METHODS

The chapter starts by providing an overview of higher education in Malaysia as a background before moving on to discussing the evolution of distance education in Malaysia. It then describes the current scenario of distance education in Malaysia and how Outcome Based Education (OBE) and Credit Transfers for MOOCs (CTM) are implemented in programme development to assessment in the Malaysian higher education system regulated by the Malaysian Qualifications Agency (MQA). The authors looked at the official documents available on the public domain of Universities and analysed keeping in view the focus of the chapter. Also, the authors critically reflected on their own experiences of working in the Open University. In the discussion stage, we looked into the various challenges faced by the open universities in terms of retention, graduation of students, declining enrolment numbers, students' assessment and competition due to multiple players in the industry based on the analysis of multiple national and international research studies and official documents from the government like the Malaysian Ministry of Education, government agencies like MQA and others. It concluded with the probable ways of meeting these challenges.

OVERVIEW OF MALAYSIAN HIGHER EDUCATION

University of Malaya was established in 1962 as the first university of Malaysia. Since then, Malaysia has seen the rapid growth in terms of universities and student enrolment. In the eighties, Malaysia saw the participation of private colleges offering twinning programmes of Diploma and Certificate by established universities from Australia, UK and USA. They also offer '3+0' degree programmes in partnerships with the Malaysian private higher education institutions. As per this scheme, the students were to spend two years in Malaysia and the remaining programme duration in the main campus abroad.

The progression since 1996 has led Malaysia to be recognised as among the best performer on openness to international higher education (Morgan, 2016). The report used 37 qualitative indicators in 3 broad categories and surveyed 26 countries. Malaysia scored well in all three categories, namely openness and international mobility policies, quality assurance and degree recognition, and access and sustainability (Morgan 2016). This report was the result of Malaysia's commitment and dedication towards championing higher education in the globalised world. Higher Education Institutions in Malaysia could be classified as Public and Private Institutions. As of now (in 2019), there are 469 private higher education institutions which consist of 53 private universities, 20 public universities, 10 foreign university branch campuses, 38 university colleges, and 348 colleges.

About 400 thousand new students enrolled during 2017-18 in 469 institutions of higher learning. An estimated 182 thousand school leavers were admitted to public universities in 2018-19; the year saw an increase of 33 thousand students in comparison to the previous year. The efforts are being made by Malaysia to ensure that higher education is one of the sectors to 'propel Malaysia's talent in achieving a developed-nation status' (Redesigning Malaysia's Higher Education System 2018).

MQA accredited programmes are recognised as a global brand and are also recognised and accepted in Asia, New Zealand, Australia, United Kingdom and Europe. Malaysia is also an educational hub with 173

thousand international students from over 135 countries enrolled to various programmes. Students are mostly from Asia, Europe, Middle East and Africa. In view of this, it is estimated that the education sector contributes almost \$4 billion to the country's economy annually. As per estimate, the country has fixed a target to enrol 200 thousand students by 2020 and 250 thousand by 2025 (Redesigning Malaysia's Higher Education System 2018).

EVOLUTION OF DISTANCE EDUCATION IN MALAYSIA

The first set of distance programmes were started in Malaysia in 1971 by Universiti Sains Malaysia (USM), formerly known as Universiti Pulau Pinang. The programmes were offered by the Centre for Educational Services of the university to overcome the inequalities of opportunity for pursuing higher education by working adults (Mat Zin Ab Rashid 1993). As stated by Mat Zin, the specific objectives for starting the distance education programmes by USM were:

- to enable adult students, who for one reason or another, do not get the opportunity to pursue higher education conventionally, and to equip them with a degree qualification;
- to make higher education programmes available to economically-deprived and geographically-isolated areas;
- to increase the rate of training of society members in order to fulfil the demand for qualified manpower;
- to improve the productivity of those already in the workforce by upgrading their knowledge and skills.

After about 30 years of the launch of Distance Education Programme by the conventional university, four open universities started to function in Malaysia in the early 2000s. The Open University of Malaysia started in the year 2000, Asia e-University in 2002, Wawasan Open University in

2007 and GlobalNext in 2012. The brief profile of each of these universities is as follows:

Open University Malaysia (OUM)

The University was established in August 2000 in Kuala Lumpur, owned by METEOR (Multimedia Technology Enhancement Operations Sdn. Bhd.), a consortium of 11 public universities in Malaysia. It is the seventh Malaysian private university, which leverages on the quality, prestige and capabilities of its consortium. There are 37 learning centres throughout Malaysia where its main campus is at Kuala Lumpur. OUM has over 180,000 students in about 44 academic programmes. OUM caters to the academic needs of not only Malaysian students but also students from Bahrain, Bangladesh, Canada, Ghana, India, Indonesia, Libya, Maldives, Pakistan, Qatar, Saudi Arabia, Singapore, Sri Lanka, Somalia and Yemen (OUM 2019).

Asia e-University (AeU)

The University, founded by the Asia Cooperation Dialogue (ACD) foreign ministers is a multinational university in Kuala Lumpur, which offers on-campus, blended and online learning mode programmes. Asia Cooperation Dialogue is represented by the foreign ministers of 34 Asia Pacific countries, and it aims to promote cooperation in areas such as education, through projects such as Asia e-University at the Islamabad 2005 and Doha 2006 Asia Cooperation Dialogue ministerial meetings. The university is a member of the Association of Commonwealth Universities and other international higher educational organisations. It has more than 28,000 students and has established learning centres in most of the states of Malaysia, as well as in other countries. AeU has a network of locations to deliver undergraduate, postgraduate and executive development programmes (AeU 2019a & AeU 2019b).

Wawasan Open University (WOU)

Wawasan Open University (WOU) is a private, not-for-profit university, established in the year 2006 under the Private Higher Educational Institutions Act 1996 (Act 555) of the Government of Malaysia. WOU has expanded its nationwide delivery as a full-time on-campus learning institution (Penang state only) and offering part-time programmes through open distance learning (ODL). Presently, WOU offering a total of 54 academic programmes. Till date, more than 24,000 students have experienced the ODL opportunities provided by WOU.

GlobalNXT University

GlobalNxt University delivers about 5 programmes through a unique online global classroom pedagogy with over 75 distinguished faculties from across 17 countries. GlobalNxt University, based in Kuala Lumpur received the university status in 2012. All 5 programmes are offered entirely online. Through a cutting-edge online learning model, U21Global was able to offer its students the same standard of high-quality programmes found at traditional world-class brick-and-mortar universities, but packaged and delivered in an innovative, technology-enhanced format.

CURRENT SCENARIO

The 4 Open Universities together have enrolled more than 241 thousand working adults and about 42% of these working adults have acquired degrees/diplomas through distance learning. In terms of enrolment and reach, OUM is the largest university, whereas GlobalNxt University is the smallest university with 5 programmes but with a wider network of students enrolled from 72 countries.

Profile of Students

The student profiles of these Malaysian open universities are changing. As reported by Phalachandra (2018), the students' participation of the younger age group in ODL at WOU is increasing.

Table 1. Student Profiles (Age Group)

Year/s of reference	Number of students	Age Groups (in %)			
		Below 30	30-39	40-49	50 and above
Jan 2007 to July 2012	11,099	43.2	38	14.5	4.4
July 2018	4802	53.1	30.8	13.1	3

As can be seen from Table 1 above, during 2018, about 53.1% of enrolled students were of below 30 years of age, whereas between 2007 and 2012, it was 43.2%. This shows that more and more of the younger age working adults prefer to continue their higher education. About 42% of the July 2018 semester students are married. This definitely will have implications for ODL institutions to think of using alternative technologies to sustain students' interest and engagement in the delivery of course materials.

Outcome Based Education (OBE)

Due to the democratisation of education in Malaysia, there has been an increase in the number of institutions of higher education, both public and private. This has resulted in a wide array of qualifications being awarded with diverse arrangements and nomenclature. It has also resulted in competition between the public and private training institutions of various ministries and industry-based skills providers. Confusion arose with the qualification titles, as there was a lack of nationally agreed criteria for the nomenclature used and the inconsistency of defining academic credits. As a result, the confidence of the public regarding academic standards was

greatly shaken. The Malaysian government then created the Lembaga Akreditasi Negara (LAN) or National Accreditation Board in 1997 before its duties were taken over by the MQA in 2007 to streamline and coordinate the quality assurance system in all institutions of higher learning in Malaysia. MQA adopted the Outcome Based Education (OBE) philosophy under the Malaysian Qualifications Framework and that has perpetuated to all institutions of higher learning.

What Is OBE?

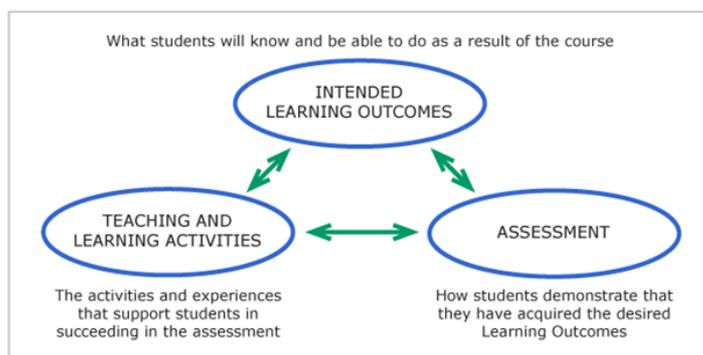


Figure 1. Constructive alignment for course learning outcomes (The University of Adelaide 2016).

OBE is an educational theory that bases each part of an educational system around its outcomes. It is a student-centered learning philosophy that focuses on empirically measuring students' performance. By the end of the educational experience, each student should have achieved a particular goal. It aims to produce graduates with certain criteria based on the outcomes of their programme of study, which are aligned with MQA's domains of learning outcomes. The objectives of a programme are operationalised as programme learning outcomes and they are aligned to the course learning outcomes for each course under that programme. Learning activities and teaching strategies are developed to attain the outcomes. Assessment methods are also developed to verify that the

outcomes stated have been achieved. These are built into a constructive alignment (Figure 1) to ensure that the graduates produced are wholesome and meet the needs of the industry.

Accreditation of Prior Experiential Learning (APEL)

Accreditation of Prior Experiential Learning (APEL) provides an opportunity for individuals with working experience but lack formal academic qualifications to pursue their tertiary studies. APEL involves the identification, documentation and assessment of prior experiential learning to determine the extent to which an individual has achieved the desired learning outcomes to access to a programme of study.

Recognition of Prior Learning

Credit transfers are a normal practice in most of the institutions around the world. In Malaysia, it is a practice regulated by the MQA. In Malaysia, credit transfer is divided into two categories, formal and non-formal learning. Each category is allowed up to 30% of the total credits for each programme. For example, for an undergraduate programme where the total credit hours for completion of a programme are 120 credit hours, the total amount for each category is 36 credit hours.

Each institution of Higher Education in Malaysia is allowed to exercise credit transfer. Credit transfer, also known as Advance Standing, is a process that grants students credits by taking into account their academic qualifications and educational experience of courses that were previously undertaken at another institution. This is beneficial to ODL students as it allows them to have a jumpstart in their studies and at the same time, reduces the expenses for their education. APEL in Malaysia can be divided into 3 different categories, they are:

- APEL for Admissions (APEL-A) which was implemented since 2015
- APEL for Credits (APEL-C) which was implemented in 2017
- APEL for Qualification (APEL-Q) would be officially introduced in 2021.

Also included is the credit acquired by going through MOOC. The APEL system was mooted in 2014, which is in line with the Malaysian Government's aim to promote lifelong learning.

The Malaysian Ministry of Education (MOE) and MQA introduced the open entry system in 2007, and later replaced it with the APEL system in 2011, which acts as an 'alternative' entry route and another means of gaining credit within a formal programme of study, keeping in line with the Malaysian Qualifications Framework (MQF) to recognise the value of learning gained outside the formal education system (Ooi & Arathai, 2019)Noraini, Wahid & Ali (2015, p.146) defined APEL, under MQF, as "a systematic process that involves the identification, documentation and assessment of prior experiential learning, such as knowledge, skills and attitudes to determine the level at which an individual has achieved the desired learning outcomes, as access to a programme of study and/or the award of credit."

APEL (A) was introduced in 2015 as a replacement for Open Entry. Its purpose was to recognise learning regardless of how and where it was acquired for the purpose of access to a programme. Applicants were required to submit the application for APEL (A) certification to MQA. The basic requirement for APEL(A) is that it is only applicable to the Malaysians only. Applicants must have relevant work experiences and they can be of any age if they are taking Diploma programmes. However, they must be aged 21 and above for undergraduate programmes, and aged 30 and above for postgraduate programmes. In order to qualify for the APEL(A), they have to pass the aptitude test and portfolio for undergraduate programmes, as well as an additional interview for a postgraduate programme. Currently, there are only six APEL Assessment Centres partnered with MQA and they are Wawasan Open University

(WOU), Open University Malaysia (OUM), Universiti Utara Malaysia (UUM), Universiti Teknologi Malaysia (UTM), Universiti Teknologi MARA (UiTM) and Universiti Tun Hussien Oon Malaysia (UTHM).

APEL(C) was introduced in 2016. Its aim was to recognise learning regardless of how and where it was acquired for the purpose of a course credit award in an academic programme pursued. The applicant is required to submit the application for APEL (C) assessment to the Institution of Higher Education that has obtained approval from MQA to conduct APEL (C). The initial four institutions that obtained approval from MQA to conduct APEL (C) were Wawasan Open University (WOU), Open University Malaysia (OUM), Universiti Teknologi MARA (UiTM) and INTI International University with many more now added to the list to reach 31 institutions of higher learning. The assessment instruments for APEL(C) vary according to the nature of the course and the students' or the institutions of higher educations' preference, which may be either a challenge test or portfolio assessment. The basic requirement for APEL (C) is that it is open to all students, in which students are required to pass all the APEL (C) assessment.

APEL (Q) is expected to be introduced in 2021. The applicant will be awarded an academic qualification without going through the academic programme in the institution of higher learning after assessing the applicant's working experience and other various forms of assessment. It has been conducted in countries like Canada, Australia among others. APEL (Q) will be implemented in Malaysia once the implementation of APEL (C) has been properly regulated. APEL (Q) is still at the study stage. A person who has at least 20 years of work experience will sit for a test and his portfolios will be assessed to determine an award of up to master's degree without having to attend classes. MQA will be conducting a pilot project after carrying out a feasibility study.

The benefits of APEL are many and they include increasing the learners' self-confidence and giving them the motivation to continue their education. APEL also provides learners with the opportunity to gain access to higher qualifications based on their working experiences. This helps students to further their learning and personal career development. It helps

them to reduce the duration of their study, which in turn reduces the cost of their studies as well. It gives the learners pride that their work experience is not in vain but has value for credits in their studies. It also provides the opportunity for learners who did not manage to obtain tertiary education due to multiple reasons, to pursue their education.

CREDIT TRANSFER FOR MOOCS (CTM)

“The learning acquired by the individual through MOOC and the credits awarded must be equivalent to the corresponding learning and credit value of the course applied for credit transfer.”

“In ensuring the integrity and credibility of the assessment system in granting the relevant credits for MOOC, the following criteria *must* be adhered to when awarding credit for MOOC by individuals, whether during the course of their formal studies or courses undertaken for personal enrichment prior to their enrolment in HEP” (HEP-Higher Education Provider) (MQA, 2016b).

Having recognised the need to consider transfer of credits accrued to a programme in higher education institutions/universities, MQA has listed the following five criteria to be kept in mind for credit transfer:

- *Authenticity*: Producing evidence that the learning gained is through the students’ efforts.
- *Coverage/Sufficiency/Adequacy*: Evidence to demonstrate sufficient breadth and depth of learning acquired through MOOC
- *Relevancy of the learning acquired through MOOC to the programme being enrolled*: This is vital to ensure that the learning is still appropriate at the time of the assessment, given that the circumstances or content may have changed since the applicant registered for the MOOC.
- *Currency*: Competency (knowledge/skills) acquired should comply with the course or programme learning outcomes

- *Fairness and Equity*: The transfer of credibility should provide equal advantage to all applicants without imposing unnecessary demands, which may prevent them from demonstrating the competency/knowledge/skills.

MQA has provided guidelines about the number of credits that could be transferred for each level of the programme as detailed in Table 2.

Table 2. Maximum limit of credit transfer through the Credit Transfer Process

MQF Level		Minimum Graduating Credits*	30% of total graduating credit of a specific programme of study
8	Doctoral Degree (Applicable only to coursework or mixed mode programmes)	Based on the approved credits of the coursework component OR 80	24
7	Master's Degree (Applicable only to coursework or mixed mode programmes)	40	12
	Postgraduate Diploma	30	9
	Postgraduate Certificate	20	6
6	Bachelor's Degree	120	36
	Graduate Diploma	60+6 (MPU)	20
	Graduate Certificate	30+6 (MPU)	11
5	Advanced Diploma	40	12
4	Diploma	90	27
3	Certificate	60	18

HOW OBE IS IMPLEMENTED IN PROGRAMME DEVELOPMENT TO ASSESSMENT?

OBE is recommended to be implemented in all programmes accredited under MQA. At WOU, learning outcomes are systematically discussed. The level of study and the level of anticipated cognitive skills defined by Bloom (1956) are also taken into consideration. The appropriate learning activities for each course are then specified. The following macro

considerations are taken into account when learning outcomes are determined. They include:

- Linking current demand of industry, workplace knowledge and skills
- Linking course goals with larger or overall programme goals
- Planning the course activities based on intended outcomes and level of study
- Aligning the learning outcomes with the assessment criteria and the level of study in every course.
- Ensuring that assessment tasks are designed to fulfil the outcomes of the course.

Provisions and learner support are provided by WOU to help students achieve the prescribed learning outcomes. Course materials are uploaded in the Learning Management System (LMS). They are pedagogically designed to facilitate self-learning, study guides and laboratory instructional guides. Besides that, student learning support such as face-to-face tutorials, face-to-face laboratory classes, telephone tutoring and consultation, additional postings of teaching and learning materials on WOU's own Internet-based Learning Management System (*WawasanLearn*). The *WawasanLearn* is available 24×7, online digital library resources that are available 24×7; support from Regional Centres including Internet-connected computer terminals and assessment strategies that are designed to evaluate the achievement of the intended learning outcomes are also given.

PROGRAMME DEVELOPMENT, DELIVERY AND STUDENTS ASSESSMENT

It is pertinent to mention that the institutions/universities in Malaysia can offer only those programmes, which are accredited by MQA. The academic programmes are developed by the universities based on the

Programme Curriculum Standard issued by the MQA. The Programme Curriculum Standard provides the guidelines with respect to the number of credits a programme should have, programme aims, learning outcomes to be achieved, the process of assessing students learning and the criteria of student selection. Each of the Programme Learning Outcomes (PLOs) is to be aligned to 5 cluster outcomes listed by MQA as the Malaysian Quality Framework (MQF). The 5 cluster outcomes are:

1. Knowledge and Understanding
2. Cognitive skills
3. Functional work skills focusing on a) practical skills b) interpersonal skills c) communication skills, d) digital skills e) numerical skills e) leadership, autonomy and responsibilities
4. Personal and Entrepreneurial skills and
5. Ethics and Professionalism.

Programme Development

MQA provides guidelines for developing a programme. The guidelines include information such as the programme learning outcomes to be included, the number of credits the programme should have and the entry qualification required. These guidelines are adhered to by the ODL institutions. Of course, a few changes could be made as per the institutional requirements. For example, with respect to outcomes, one could rephrase and limit to 3 outcomes, and the number of credits could be around 40 credits. An example of the guidelines issued by MQA and followed in the universities for a M.Ed. programme can be understood in terms of the objectives of the programme as given below.

At the end of the programme (i.e., M.Ed), the scholar-teacher should be able to :

- Apply and integrate knowledge to current research issues in specific areas of study

- Apply research techniques to acquire, interpret and extend educational knowledge
- Demonstrate the capacity to communicate, lead and work together in building new knowledge
- Synthesise advanced knowledge and engage in problem solving skills and scientific methods
- Demonstrate the capabilities and dispositions to work as engaged professional educators in building learning communities into the future
- Design and conduct research professionally and ethically, and
- Continuously, incrementally and cumulatively develop encyclopaedic general knowledge and diverse individual talents and potentialities.

Similarly, the credit is stated as the following Figure:

MASTER'S DEGREE BY COURSEWORK			
MINIMUM GRADUATING CREDIT – 40			
COMPONENT	CREDIT	PERCENTAGE (%)	REMARKS
Compulsory Courses	9-13	22-32	e.g.: Qualitative and Quantitative, Research Methods; Seminar in Education and Academic and Professional Writing
Discipline Core/Elective	15-25	38-63	Electives from the discipline of education
Project Paper/Practicum/ Other Courses (for 100% coursework)	6-12	15-30	
Total	40	100	

Note: Coursework component must include courses in theory and research methodology.

Figure 2. Credit System.

Course Structure

Based on the course learning outcomes, a course writer develops the course blueprint and materials. The course materials are developed by following a course structure like the one illustrated below in Figure 3.

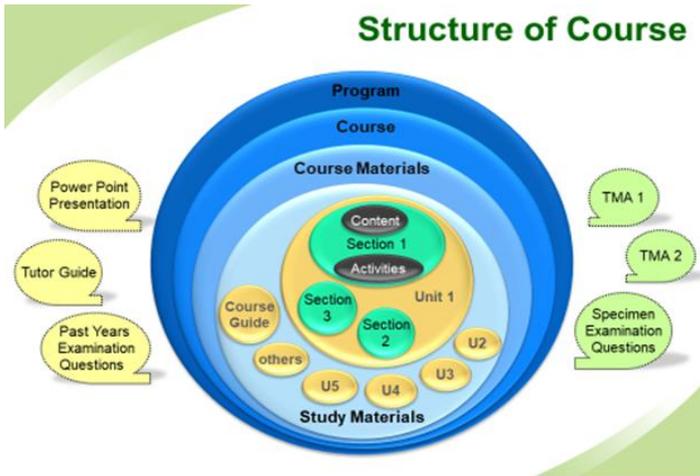


Figure 3. Course Structure.

Course Materials

The course materials, which are uploaded in the LMS, are the mainstay of the course with additional resources including links for text, audio, video clips and power point slides. The faculty in-charge of the course could modify or add additional resources in the LMS as and when required. The course materials are accompanied by a course guide. A course guide provides information about how the course is structured, the list of course objectives/outcomes, the student's instructional time and the course assessment procedures. The course materials in WOU are made up of 5 units, whereas in OUM and AeU, the course materials are made up of about 10 topics and the total instructional time is about 120 hours for a 3-credit course and 200 hours for a 5-credit course. Each credit involves 40

hours of student's time. This is in accordance to the standards procedures of MQA.

As practised in most of the open universities, the course content is structured to units, sections and subsections. Each subsection is followed by a set of self-assessment activities. Each subsection can be considered as a 'learning object.' For example, for a course with 5 units, each unit having 5 sections and each section having 4 subsections will result in 120 independent learning objects, which provide the liberty to course developers to reshuffle the content. The course development involves teamwork. For example, in WOU, the practice is to have a course team consisting of a Course Coordinator, course writer/s, external course assessor, an instructional designer and a graphic designer to develop a course.

Student Learning Time

Table 3. Distribution of Students' Instructional time across Different Inputs

Inputs	WOU	OUM	Asia e-University
Study materials (Self-study)	52 hours	63 hours	95 hours including doing 1 assignment
Attending tutorials	10 hours	10 hours	10 hours
Online participation	23 hours	12 hours	15 hours
Revision	----	15 hours	
Assignment and examination	20 hours (Exam duration is not included in students instructional time)	20 hours	
Library research	10 hours		
Telephone consultation with tutors	05 hours		
Total for 3 credit course	120 hours	120 hours	120 hours

As mentioned earlier, a student is required to spend about 120 hours of time to complete a 3-credit course. Table 3 shows how 120 hours are distributed across different aspects of students' instructional time.

Course Delivery and Student Support

The students' support system in an open university is learner centric and involves all the resources a student can access to carry out the learning activities. The delivery of the courses is done by providing course materials, additional reading materials. The following Figures elaborate the systems adopted in the ODL institution for making the course as learner centric and mediated by technology based learning support services. The technology mediated learning support services include course materials, tutorials through F2F mode or through Skype/WizIQ/Video Conference, WawasanLearn (LMS).

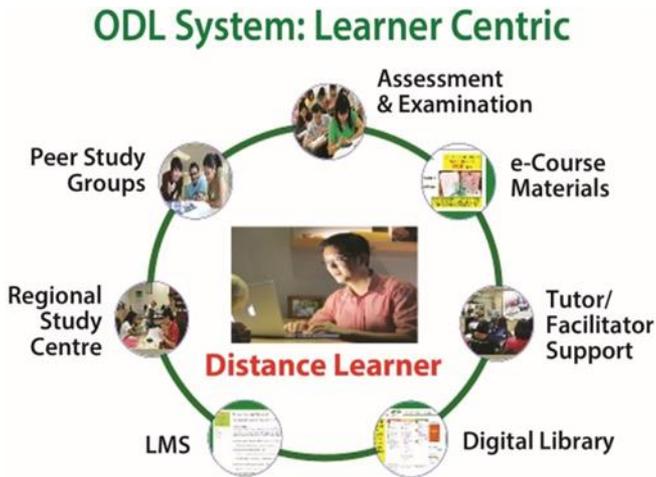


Figure 4. Learner Centric ODL System.

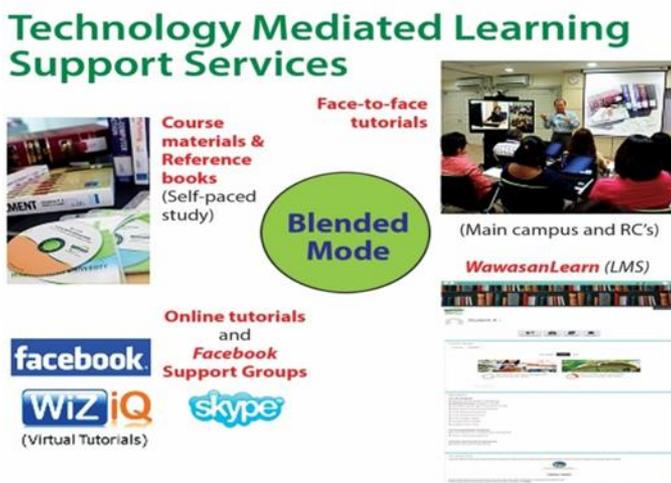


Figure 5. Technology Mediated Learning.

Students Assessment

The students are expected to carry out one or two assignments as part of the continuous assessment and take a final proctored examination at the end of a semester. The usual ratio between continuous assessment and examination is about 50:50 for Postgraduate Courses and 60:40 for lower level courses. In WOU, the students are expected to complete two assignments whereas in OUM and AeU, the students are to complete only one assignment. Since the programmes are based on principles, the exam questions are aligned to the respective course learning outcomes, course units and Bloom's taxonomy.

Student's' Feedback

In WOU, various provisions have been made to obtain students' feedback in every semester and to improve the quality of learner support services. The provision includes:

1. Student dialogue: Before the end of each semester, interactive sessions with students are held by an academic faculty member in each of the Regional Centres. The students provide feedback on their experiences on issues such as tutorials, tutors, assignments, online assignment system, Turnitin.com (for checking plagiarism), Learning Management System (LMS), resources such as the library and regional centres, and quality of course materials.
2. Student's feedback survey: An online survey with 30 statements on a 4-point scale is conducted in each semester to gather the students' view on different aspects relating to new courses, which include tutorial sessions, support from the tutor, course materials, Learning Management System, and resources including library and assignments.
3. Tracer study: Tracer study survey is conducted to obtain feedback from graduate students about their experiences during their studies. It also helps to know whether students have received any rewards from the employer in terms of their salary or promotion in view of acquiring their diploma/degree from the university.

Tutorial Observation and Tutors' Feedback

The tutorial sessions of newly appointed tutors are observed by an academic faculty member with a view to understand the competency of a tutor with respect to his/her preparedness to handle the class, content knowledge and delivery, effective use of teaching and learning resources, time management, classroom interaction and in providing constructive feedback to students.

Similar to student dialogue, the tutor dialogue sessions are also conducted in the Regional Centres to obtain feedback from tutors with respect to the quality of course materials, assignments, students' performance, sufficiency of resources for their courses, and the university's support services.

DISCUSSION

Student Retention and Graduation

ODL institutions have reported very low completion rates with respect to their programmes such as The Open University UK: 22%, Open University Netherlands: 2.5%, Athabasca University: 5.3% (Simpson 2010). The reasons for low graduation rates include:

- Enrolment of students with low or no qualifications
- Issues relating to health, finance, family and change of job
- Transfer of credits to other institutions before graduation
- Not able to cope with the academic load

The Anderson study (2011) listed about 8 sets of factors which lead to dropouts. These factors include weak induction and orientation, poor assignment design and course length, lack of motivation, adoptability related problems and students' characteristics such as attitude to education and lower Grade Point Average (GPA) are reported as major factors for dropout (Cochran, Campbell, Baker & Leeds 2014; Tsai, Finger, Chen, & Yeh 2008; Yukselturk & Bulut 2007). In another study by Bawa (2016), the factors for dropouts were classified into few categories such as misconceptions relating to cognitive load, social and family factors, motivational factors, technological constraints, lack of instructor understanding of online learners, faculty limitations of using technology and institutional limitations to training faculty.

In Malaysia, at the time of enrolment to a programme, the students are provided with a progression path to follow so that they will be able to complete the programme in a stipulated time. However, it is observed that hardly about 15 to 20% follow the progression path and complete the programme. Another 20% took about 1.5 to 2 times the duration of the programme to complete (Phalachandra 2018). This phenomenon is noticed in an ODL institution, as one of the principles of distance education is the

provision of flexible and self-paced learning. Furthermore, there are instances of students who have been found to be inactive for a long time and returning to studies after 6 to 7 years. This has led to certain academic and administrative difficulties to the open universities in maintaining a programme.

Probably the open universities should identify the inactive students, and provide some incentives to encourage them to complete the programme. Additionally, there is a need for the universities to plan a reasonable duration by which a student should complete the programme. For example, a five-year graduate programme should be completed in 7.5 years rather than opening it for lifelong. The universities should work out a strategy of having a 5-year degree programme (120 credits) to be structured as a Certificate programme (30 credits), Diploma (60 credits) and a Degree of 120 credits. In this scenario, the students could have the flexibility of lateral entry and exit after certificate and diploma levels.

It has been found in WOU that about 20% of student dropped out due to financial reasons (Phalachandra, 2018). To overcome this problem, the university could negotiate with commercial banks to facilitate students to get educational loans. The university also sought recognition from government agencies like the National Higher Education Fund Corporation or Tabung Pendidikan Pendidikan Tinggi National (PTPTN) and the Penang State Government Loan, among others, to enable students to get financial aid.

Falling Enrolment Numbers

It has been observed that student number is declining in the universities including open universities. This is probably due to lack of interest for the usual academic degrees, downsizing of staff by the employer, increasing costs of higher education, or irrelevance of the university programmes to the industry.

The open universities probably should attempt to update the course content and offer programmes catering to the industry needs. According to

Singh (2019), a report stated that there were 178,000 graduates against 98,000 jobs available in Malaysia, so there is a huge gap between demand and supply. Hence, there is a need to have linkages between institutions, industry and accreditation agencies so as to avoid mismatch between demand and supply of workforce.

Students' Assessment

If the assessment is for different multiple stakeholders including the employer, then the practice of providing a statement of marks/grades or certificate to indicate completion or pass may not be sufficient to judge the suitability of the potential employee. The assessment should be submitted in a different format like what were the outcomes measured-at the cognitive, affective and psychomotor domains and what is the level of achievement in relation to the broad occupational requirement (competencies, content knowledge, application, problem solving, creativity, communication skills, attitudes etc.).

Multiple Players

The number of institutions offering online programmes has increased over a few decades. Of late, the Malaysia Ministry of Higher Education (MOHE) and MQA have permitted the conventional institutions to start part-time programmes. In view of this, 7 institutions are offering programmes through dual mode and in addition, 7 universities are targeting working adults through their online programmes. This has led to stiff competition and resulted in universities offering incentives to attract students. The main incentives are the quantum of fee, flexible fee payment, and provision of advance standing. The open universities in Malaysia have made provisions for alumni to the avail of 20% discount for new programmes registration or 50% programme fee discount for senior

citizens, or 20% fee discount for the first semester courses of the programme.

To avoid the unhealthy competitions, which would likely to result in the dilution of quality of the programmes, it would be better to look for short and new, programmes relevant to the industry needs. A series of MOOCs and micro credential courses, which the students can take up at their convenience to accumulate credits, can be planned. If required, a transfer of maximum 30 credits to a university programme as stipulated in the MQA guidelines can also be done.

Changes during the COVID-19 Pandemic

During the COVID-19 pandemic, although distance education institutions in Malaysia were among those disrupted, it had minimum impact in terms of delivery and assessment, especially when the Movement Control Order (MCO) was implemented by the Malaysian Government on 18th March 2020. As WOU has always incorporated the use of multimedia platforms in its delivery together with face-to-face classes, during the MCO period, all classes were moved online. The multimedia platform that was chosen was Microsoft Teams. Alternative multimedia platforms like Zoom and Google Meet were also used on a case-by-case basis. Three separate training sessions were organised by the university for tutors to provide them with the training needed to fully conduct their classes online and to familiarise themselves with the various functions found in Microsoft Teams. All final examinations that were scheduled to be conducted face to face was converted to alternative assessments, which consisted of either an online quiz, assignment or project paper. All meetings were also conducted through Microsoft Teams.

CONCLUSION

This chapter discussed the various issues relating to open distance education in the context of Malaysia. The four major open universities were introduced and a brief profile and history of each institution was given. It then went on to discuss how programmes in Malaysia were developed based on the principles of OBE as regulated by MQA. The rigorous regulatory processes based on the programme standards provided by MQA for programme development, delivery and assessment were then discussed which provided an overview on how MQA accredited programmes were developed, delivered and assessed based on constructive alignment. Student study time, student support, assessment and feedback were used to gauge the effectiveness of the delivery methods for continuous improvement. The well-defined provision of APEL to recognise prior experiential learning for access into education, as well as credit transfer of various forms including MOOCs and micro-credentials to an intended programme were also explained. These various forms of APEL facilitate the reduction of the duration for the completion of a programme and instil a sense of worthiness for the students' working experiences. Flexible payment of fees based on courses were also discussed as among the many ways the open universities can ease adult students' burden as they juggle between work, family and studies. Finally, the strict maintenance on the quality of programmes monitored by MQA was also discussed and it included maintenance audit, continuous improvements and regular revisions of course materials. Also discussed are the challenges faced by the various open universities in Malaysia with respect to student enrolment, retention, assessment and graduation rates. These challenges are commonly faced by all open universities in Malaysia and suggestions for improvement were proposed. All of these different aspects of operations conducted by Malaysian open universities provide a general understanding of how open distance education is regulated and carried out in Malaysia.

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Chapter 9

**OPEN AND DISTANCE LEARNING (ODL) IN
THE PHILIPPINES: DEVELOPMENT,
POLICIES AND CHALLENGES**

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ABSTRACT

This chapter reports on the growth and development of Distance Education in the Philippines. It also documents the pioneering Distance Education providers in the country, the laws and policies that relate to Distance Education and Open Learning. The chapter also discusses the mode of delivery as well as the guiding principles needed by schools/universities in the Philippines to adhere to the philosophy of openness and flexibility as mandated by Open and Distance Learning (ODL) Act of 2014. In this chapter, some recent developments on the employment of online remote learning modality as a form of proactive

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response of the educational sector to continue learning during the Pandemic and to avoid learning loss while most students are on home quarantine are also discussed. The challenges that the country faced in implementing online remote learning arrangements are also included in this chapter.

Keywords: ODL Philippines, distance education, open learning, remote learning, pandemic

INTRODUCTION

In the recent years, Distance Education (DE) has grown as an effective means of instruction that targets at connecting many of the educational processes and practices between the formal and unconventional sector. In fact, for the last decades, Open Learning and Distance Education (OLDE) has attracted the educational administrators and policy makers to consider OLDE as a new educational provision. Specifically, in East Asia, the distance education institutions and/or programmes have developed promptly and have played a significant role in making education accessible and equitable to many.

Following the outbreak of the Corona Virus Disease or COVID-19, the universities in the Philippines also searched for less expensive means of instructional delivery, such as online instruction and other forms of distance education. According to a UNESCO Report (2014), East and Southeast Asia now lead the world in the delivery of distance education. In some countries, cost reduction strategies often involved greater use of online and other technology-based instruction in which a larger number of students could be enrolled at a lower cost per-student. Indeed, Asia leads the way in using distance education as a means to extend access while controlling the costs in higher education. Despite its significance, potential and wider scope of acceptance and application in other countries little is known about OLDE in the Philippines, especially before the application of flexible and remote learning in most schools when the COVID-19 Pandemic hit the world.

Thus, to be able to respond to the increasing demand for highly trained professionals and human resources for the purposes of socio-economic development in the East Asian Region, several government institutions of different nations have given extraordinary attention to the growth, significance, potentials and prospects of OLDE in higher education, and this is what, this chapter is going to discuss with particular reference to OLDE application in the Philippines. Specifically, the growth of OLDE in the Philippines as well as the recent developments of DE in time of global health crisis is presented in this chapter. The recent government undertaking and policies to support the adoption of DE in the country are also discussed in some detail.

METHODS

This research is a descriptive qualitative research that used secondary data. Documentary and content analysis was done to be able to realise the objective of this research. Specifically, the researcher perused various forms of policies that emanates from the Acts of Congress (the legislative) and the Executive.

THE GROWTH OF DISTANCE EDUCATION IN THE ASIAN REGION

Across the region, more than 70 universities now deliver instruction exclusively through DE (ADB, 2011). Some of these initiatives are extremely large. In China, the Central Radio and Television University directly serves about 2.6 million active students and, indirectly, another 3.5 million through its network of Provincial Open Universities (ADB, 2011). The Universitas Terbuka Indonesia serves nearly 650,000 students, most of whom are teachers enrolled in in-service training programmes (Zuhairi, 2010). Meanwhile, it was also noted that the largest universities by

enrolment in the world which includes total active enrolment across all campuses, as well as off-campus study, are from the Open Universities in Asia. For instance, Indira Gandhi National Open University (IGNOU) has more than 3 million enrolment, Bangladesh Open University and Anadolu University with more than 2 million enrolment. The enrolment numbers listed are the sum of undergraduate and graduate students in active enrolment.

Truly, there has been massive growth in the number of institutions and students studying through DE. In Asia particularly, the largest number of students are using this mode of education, compared to other regions of the world. Most of the mega-universities are in the Asian region. Most of the impetus has come from the concentrated efforts of central governments, with the establishment of dedicated open learning institutions. Country after country in Asia has established its own Open University/ies.

DISTANCE EDUCATION (DE) IN THE PHILIPPINES

Pioneering Distance Education Providers

As an archipelago of more than 7,000 islands, the Philippines is an ideal place for the development of DE. Currently, only 17 higher education institutions offer DE programmes. Among the existing standalone DE providers are the University of the Philippines Open University (UPOU), which is part of the University of the Philippines System, CAP College, the Asian Institute for Distance Education, which was founded in 1984, and the Southeast Asia Interdisciplinary Development Institute. The rest are conventional universities offering a few of their programmes by way of DE. Most of the DE provision is at the graduate level, which would perhaps account for the low DE student enrolments nationwide (Jung, I. et al., 2011).

Included in the DE providers are those institutions that stems from the conventional educational institutions. These includes Pamantasan ng Lungsod ng Maynila whose graduate programmes are generally offered

through off-campus modality; Polytechnic University of the Philippines which offers both undergraduate and graduate courses using print-based modules and other ICT-enabled facilities, Philippine Women's University, Central Luzon State University, among others. Among the recent efforts of the government to institutionalise distance education in the country was issuance of the law on DE which is enunciated in Republic Act 10650, otherwise known as "*An Act Expanding Access to Educational Services by Institutionalising Open Distance Learning in Levels of Tertiary Education and Appropriating Funds Therefor*" which was approved by Pres. Aquino in December 2014.

Recent Developments in Time of Covid 19

With the closure of the institutions of learning as a response to the COVID-19 pandemic across different countries of the world, almost 70% of the world's students are not attending school (UNESCO, 2020). Before the outbreak of the Pandemic, the world was already dealing with a learning crisis, as evidenced by high levels of Learning Poverty. With the spread of the COVID-19 Pandemic, among many disruptions to normal life, 160+ countries mandated temporary school closures, leaving~1.6 billion children and youth out of school.

In the Philippines, the enrolment figures had been grossly affected by the Pandemic as the actual enrolment statistics fall short of the target. This year's figure in basic education is 6M+ short of the adjusted target of 80% of last year's enrolment (27.7M) submitted by the Department of Education to the National Economic and Development Authority (NEDA). Meanwhile, in higher education, the government officials have warned that enrolment in private as well as state universities and colleges (SUCs) is expected to plunge by as much as 70 percent this coming school year due to economic hardships faced by students and their families caused by the COVID-19 crisis. Policy changes were made to respond to the challenges brought about by the COVID-19 Pandemic. These changes include the learning delivery modality which used to be formal and structured; the

opening of classes was also affected which became five (5) months delayed (from June-October 2020) and the need for transition to remote learning modalities was very apparent.

To be able to continue learning and respond to the needs of more 3.5 Million college students in more than 2,400 Philippine higher education institutions (HEIs), conventional schools and universities in the Philippines had implemented various forms of remote learning strategies such as employment of online learning (synchronous and asynchronous), use of modular approach (print-based distribution of learning materials), and utilised Learning Management System (LMS). This was a total turn-around in the way traditional schools operate via face-to-face residential mode. Meanwhile, the non-conventional DE provider or the pure/stand-alone DE institutions (those without traditional universities, purely DE delivered) continued with its operations. These institutions have a well-established system of operation, with contents already developed by experts and well-developed mode of delivery which are either transmitted via online or print based modes. These are the likes UP Open University and the Asian Institute for Distance Education (AIDE).

Guiding Principles of ODL

The law on DE in the Philippines provides the guiding principles for ODL courses or subjects, which are offered in ODL and non-conventional modes, adhere to the following points:

1. Learner Centredness–The ODL programmes shall focus on the needs of the learners and the goals of facilitating independent learning.
2. Quality and relevant programmes–The ODL programmes shall be equivalent in challenges and depth to conventional classroom or traditional programmes in un- conventional delivery.
3. Transparency to Guide Informed Choice–The ODL implementers shall make information about their programmes, particularly on the

- curriculum and delivery mode/strategies, student support services, and other relevant information, available to accrediting bodies, academic peers, regulators and students. Updated information shall be made accessible through the internet.
4. Peer review—A review by experts in ODL to determine the acceptability of the courses or subject shall be institutionalised following the criteria set by the Commission on Higher Education (CHED) and/or TESDA, as applicable.
 5. Public Responsibility and Accountability—The implementers shall pay heed to the public impact of ODL programmes and shall always exercise due diligence in avoiding any harm to programme stakeholders, especially the students. Consumer protection, in particular, shall be a priority because of the high value that Filipinos put on education.
 6. Quality and Continuous Improvement—An HEI or post-secondary school shall embed in its programme framework the proactive needs assessment of students and stakeholders in terms of the ODL programme planning, implementation and evaluate. The interaction of students’ needs, interests and skills, technology available and Filipino culture should be carefully examined, explored and monitored to continuously improve all aspects of development and delivery.

This means that schools wanting to operate as a DE provider should meet all of the foregoing principles and they would require government recognition and accreditation before the Commission on Higher Education allows them to operate as such.

Mode of Delivery

The ODL programmes, as provided under the Philippine ODL Law, are delivered using Information and Communications Technology (ICT) and other approaches, such as the following:

1. Print: Textbooks, study guides, workbooks, course syllabi, correspondence feedback and other print formats.
2. Audio-Visual: Radio, audio cassettes, slides, film, videotapes, television, telephone, fax, audio-conferencing and video-conferencing;
3. Electronic/Computer Technology and Virtual Classrooms: Internet, CD-ROM, electronic mail, e-bulletin boards, m-learning, i-lectures, e-learning or online learning management systems; and
4. Face to face sessions: Conducted in learning and study centres (R.A. 10650, 2014).

POLICIES AND LEGISLATIONS RELATED TO DISTANCE EDUCATION

According to Sabio & Sabio (2019) who made a thorough study on the legislations and education policies on distance education, the following are laws that relate to ODL in the Philippines:

Act No. 1829 was passed into law in May 21, 1908. This is entitled “An Act providing for popular civic-educational lectures in the municipalities and principally in the barrios of the Philippine Islands”. This is the period when the Americans took over the Philippine government after the Spanish regime of more than 300 years. During this period, the United States began planning to administer the archipelago in January 1899 when President McKinley established the Philippine commission to gather information about the islands’ “various populations,” their “legislative needs,” and to identify how best to maintain “order, peace and the public welfare”. The multi-year conflict that had occurred, which Filipinos saw as a continued fight for sovereignty but which the Americans considered to be more of an insurrection, was bloody and devastating. This situation prompted the need to provide the Non-Formal Education by then Education Department to reduce the number of illiterate out-of-school youth and adults to the remote places and war-thorn areas of the

Philippines. The intention is to provide for the delivery of civic educational lectures in towns and barrios which were heavily affected by the conflict between the Philippines and Americans.

The New Commonwealth government passed Act No. 80 in 1936 to create the Office of Adult Education as part of the then Department of Public Instruction. The law, which is entitled: “*An Act Creating the Office of Adult Education, Enumerating Its Duties, Defining Its Objectives, And Providing Funds for Its Operation*” was transformed into the Adult and Community Education Division of the Bureau of Public Schools. Act 80 was signed into law in 1936. This is immediately after the period under Tydings–McDuffie when the Philippines became a commonwealth, making the islands far more autonomous, but still subject to Congress’ authority over the next decade as it prepared for independence. Still under the American rule, the law was created to deliver the following mandate, to

- (a) Initiate and conduct surveys to determine the extent and distribution of illiteracy among adults.
- (b) Enlist the interest and cooperation of organisations on adult education activities.
- (c) Prepare a comprehensive programme for adult education work.
- (d) Organise and supervise schools and classes for adults.
- (e) Disseminate instructive cultural and vocational information.
- (f) Secure lecturers, demonstrators, and extension and follow-up workers for adult education.
- (g) Train teachers and community organisers for adult education.
- (h) Cooperate with the Bureaus of Education, Health, Science, Plant Industry, Commerce and Labour in undertakings concerned with vocational training and the improvements of living conditions.
- (i) Cooperate with the Philippine Library Association for the establishment of public libraries which can better serve the educational needs of adults.
- (j) Prepare statistics and reports on its activities and the means for carrying out its objectives. (Section 2, Act 80)

After the declaration of Martial Law, the Marcos government's Philippine Constitution of 1973 created the position and transformed the Office of Adult Education into the Office of Undersecretary of Non-formal Education. This was to propagate the mission of Non-formal Education (NFE) in the Philippines which is to empower the Filipino with "desirable knowledge, skills, attitudes, and values that will enable him/her to think critically and creatively, act innovatively and humanely in improving the quality of his/her life and that of his/her family, community and country. NFE aims to reduce the number of illiterate youths and adults with need-based literacy programmes, plus continue education through basic development projects. Activities that fall under this system of education range from vocational training to adult reading classes, from family planning sessions to cultural and leadership workshops for community leaders (education.stateuniversity.com, 2019)

Batas Pambansa 232 otherwise known as the Education Act of 1982 which is entitled: "An Act Providing for the Establishment and Maintenance of an Integrated System of Education," created the Bureau of Continuing Education from the Office of Non-formal Education which shall act as the main implementing arm of the non-formal education programmes of the Ministry of Education. It shall provide learning programmes or activities that:

1. Serve as the means of meeting the learning needs of those unable to avail themselves of the educational services and programmes of formal education.
2. Provide opportunities for the acquisition of skills necessary to enhance and ensure continuing employability, efficiency, productivity, and competitiveness in the labour market.
3. Serve as a means for expanding access to educational opportunities to citizens of varied interests, demographic characteristics and socio-economic origins or status.

The Aquino government after the People Power Revolution enacted the Executive Order (EO) No. 117 in 1987 to create the Bureau of Non-

formal Education. Section 15 of the said EO created the Bureau of Continuing Education which replaces the former Bureau of Non-Formal Education. The Bureau of Continuing Education was created to:

1. Serve as a means of meeting the learning needs of those unable to avail themselves of the educational services and programme of formal education.
2. Coordinate with various agencies in providing opportunities for the acquisition of skills necessary to enhance and ensure continuing employability, efficiency, productivity, and competitiveness in the labour market.
3. Serve as means of expanding access to educational opportunities to citizens of varied interests, demographic characteristics and socio-economic origins of status.

Compared to Education Act of 1982, EO 117 required the coordination of the Bureau of Continuing Education with other government agencies so that the provision of opportunities for the acquisition of skills to enhance and ensure continuing employability, efficiency, productivity, and competitiveness of the student graduate in the labour market shall be guaranteed.

Meanwhile, Article 14, section 2(4) of the 1987 Philippine Constitution stated:

“The state shall encourage non-formal, formal, indigenous learning systems, as well as self-learning, independent and out-of-school study programmes, particularly those that respond to community needs; and provide adult citizens, the disabled and out of school youth training in civics, vocational efficiency and other skills.”

Non-formal education, in this sense, is designed to extend, complement and provide an alternative to the existing educational system. Human development thus becomes an important factor in alleviating poverty. It likewise provided the basis for all educational institutions from

basic to higher education to resort to unconventional means of educational delivery if only to make education more accessible and equitable to the many Filipinos. This period is already under the Presidency of President Corazon Aquino.

On the part of Technical and Vocational Education, the Republic Act 7796 otherwise known as TESDA Act of 1994 was promulgated through an act of Congress. In response to its mandate to deliver high quality and accessible TVET, TESDA recently launched the TESDA Online Programme (TOP). The TOP is free online courses that provides open educational resources (OER) and courses under the TOP are open and free that anyone can access from the desktop or laptop/computers. The programme was envisioned to provide training opportunities to all the Filipinos, at their own pace, at their own time, through the online courses making technical and vocational education more available to every Filipino especially for those who would not want to pursue higher education degrees in a formal university. This period is under the Presidency of Fidel V. Ramos.

CHED Memo Order (CMO) 27 s. 1995 is the first ever issuance from the Commission on Higher Education that formally defines distance education within the ambit of higher education. It provides not only the definition of distance education but also the modalities within which distance education may be delivered by institutions of higher learning.

CHED MEMO ORDER (CMO) 35 s. 2000 which is entitled: “Updated Policies and Guidelines on Open Learning and Distance Education” reiterates the need for DE institutions, whose permit was granted by DECS, to retain its old recognition. The Memorandum Order was issued as there were institutions of higher learning which recognition to operate as an open learning and distance education provider were granted prior to the creation and establishment of CHED. Hence, the need to provide guarantees for its continued operation.

CMO 5, s 2002 provided the Moratorium in the opening of new programmes offered via OLDE. The CMO was issued pending the results of the first monitoring and evaluation made by Technical Committee of Reviewers on the Open Learning and Distance Education (TC on OLDE).

Both public and private higher education institutions were the subjects of the said CMO. To ensure quality of the courses offered in a distance education environment, an evaluation by CHED and its Technical Committee was made in 2002 for quality assurance purposes.

Since globalisation became a buzz word in the early years of 2000's, the policies, standards and guidelines on distance education expanded to include borderless forms of education to cover globalised environment in higher education like transnational education. The CHED Memo 6 s. 2003 defines different forms of transnational education like twinning programmes, internationalisation, franchise agreements, satellite campuses, among others. The said CMO likewise provided opportunities to foreign educational institutions to offer their courses to the Philippines subject to rules and regulations prescribed by CHED. Likewise, the CMO was intended to improve the quality and international comparability of Philippine Higher Education institutions programmes. Recognising the power of information communication technologies (ICT) as a means to widen access to higher education, the CMO was also issued to provide guidelines to institutions that provides international/foreign qualifications, degrees, certificates and diplomas through web-based/ICT means. It must be recalled that the Philippines also signed the General Agreement on Tariffs and Trade (GATT) and also a party to World Trade Organisation (WTO) Agreement, which prompted the borderless provision of education.

Executive Order 356 (2004) was issued to reiterate the necessity to address the demand of the underserved and the marginalised for more equitable and accessible education through alternative means, henceforth, during the time of President Gloria Arroyo this Executive Order was issued to rename what used to be known as Non Formal Education to Alternative Learning System. Higher education programmes via distance learning were developed and improved during this period through the pro-poor programme of CHED, the Expanded Tertiary Education Equivalency and Accreditation Programme (ETEEAP) provides accreditation and equivalency of learning and competencies acquired outside the formal education system. The intention of this EO is to broaden the coverage of the ETEEAP programmes in higher education to make education more

accessible. Under the ETEEAP, people who have not finished college but have considerable experience and competencies acquired from either workplace or other non-formal means could earn a degree through accreditation of their prior learning. The number of graduates under ETEEAP reached 270 in 2003.

To further provide for a strengthened TNE mechanisms, policies and standards, CMO 2 s. 2008 was issued which serves as an improved version of CMO 6 s. 2003. The new CMO on TNE recognises the phenomenal impact of globalisation which created a climate for borderless teaching and learning as well as expanded opportunities for cross boarder education/TNE. Such opportunities likewise acknowledge the Philippine Universities' potential to offer credits and degrees in a borderless environment. Therefore, it is through the issuance of this CMO that TNE was considered a matter of public interest in terms of relevance of content to national needs and the need to safeguard the interests of legitimate education providers and the public. Emphasis on international treaties and convention were referred to in this CMO, which was made the basis for the promulgation of the said CMO like UNESCO, ASEAN and the Vienna Convention on Consular Relations. Quality assurance measures were also provided to ensure compliance to quality of operations among TNE players. This is to protect potential beneficiaries and stakeholders from fraud and bogus operations.

Further, under the MORPHE (which is the Manual of Regulations for Private Higher Education) which is written in CMO 40 s. 2008 consolidated all CMO's relating to ALS, TNE, ETEEAP and distance education. It incorporates all the CMOs mentioned above to be contained in only one document for the benefit of all State Universities and Colleges as well as private higher education institutions. The period marks the presidency of Gloria Arroyo where much effect of globalisation locally and internationally was felt during this time.

Six years after the promulgation of the MORPHE, in 2014, RA 10650-otherwise known as Open Distance Learning (ODL) Act, was passed into law. This is the very first law on DE that is made applicable to both TECHVOC and higher education. As seen in the previous discussion, the

law on DE as applied in basic education started as early as 1908 while that of TESDA was slightly touched in RA 7796 s. 1994. However, the ones that apply to higher education are all written in RA 10650. After 106 years, it was only in 2014 that the Philippine Government realises the need for a law in DE and open learning that is made applicable to higher learning. The law intends to expand and further democratise access to quality tertiary education through the promotion and application of open learning as a philosophy of access to educational services, and the use of distance education as an appropriate, efficient and effective system of delivery quality higher and technical educational services in the country. Highlighted in the said Act are the guiding principles in the conduct of ODL, the admission requirements and academic policies, course development requirements and the mode of delivery. The issuance of the law provides a solid framework for institutions of higher learning which intends to venture into offering programmes via distance education mode.

The United Nations member countries adopted the so-called Millennium Development Goals (MDGs). In pursuance of the MDGs, member states are likewise mandated to realise the measures laid down in Education for All Plan in 2015. The EFA goals contribute to the global pursuit of the eight Millennium Development Goals (MDGs), especially MDG 2 on universal primary education and MDG 3 on gender equality in education, by 2015. Education For All (EFA) is a global movement led by UNESCO (United Nation Educational, Scientific and Cultural Organisation), aiming to meet the learning needs of all children, youth and adults by 2015. EFA was adopted by The Dakar Framework in April 2000 at the World Education Forum in Senegal, Africa, with the goal in mind that all children would receive primary education by 2015. Not all children receive the education they need or want, therefore this goal was put in place to help those children. UNESCO has been mandated to lead the movement and coordinate the international efforts to reach Education for All. Governments, development agencies, civil society, non-government organisations and the media are but some of the partners working toward reaching these goals.

Locally, EFA in the Philippines named six production tasks but the one that applies to distance education and alternative learning system is task No. 6 which is: “*Alternative Learning Systems: Transform non-formal and informal interventions into an alternative learning system yielding more EFA benefits.*” According to Rodriguez (2014), adult literacy programmes might be delivered more effectively (i.e., reaches more of those with greatest needs for learning enhanced literacy skills and engages much more those learners actually reached), if such literacy programmes were integrated in all existing socio-economic programmes addressing adult concerns. The needed action however is to define and propagate cost-effective alternative learning options for achieving adult functional literacy in regional languages, Filipino and English and for government to finance the integration of these alternative learning options for the effective acquisition of functional literacy.

Finally, CMO 62 s. 2016 provided the Policies, Standards and Guidelines (PSGs) on Transnational Education (TNE). It added to previous CHED issuances on TNE, the categories of TNE that can be considered by higher educational institutions; implementing guidelines and procedures specifically, eligibility requirements of local institutions which will offer outbound TNE as well as eligibility requirement of foreign institution which will offer inbound TNE; registration guidelines and procedures; revocation of authority to operate as TNE and Sanctions.

DISCUSSION

The Philippine system of higher education is generally traditional. There are a handful of higher education institutions which are fully distance. For a traditional school/college/university to offer a course via DE, it must initially obtain Level III accreditation before the Commission on Higher Education (CHED) allows any institution to offer courses via open and DE mode. Given the global health crisis however, most universities, if not all, were forced to offer courses (which used to be

traditional and face-to-face) and deliver content via online infrastructure facilities using either in-house or outsourced learning management system.

With this platform, the challenges in the delivery of content using remote learning online facilities can be greater given that the country has slow internet speed. To support this claim, an Ookla Speed test was made in August 2020, the Philippines ranked at the lower part of the global index in terms of average broadband and mobile speeds. At 16.44Mbps for mobile downloads, the country landed the 199th spot out of 139. With 25.34 Mbps for broadband, we landed at the 106th place out of 174 (yahoonews.com). Further, the country's internet cost is also among those that are awfully expensive. In the Digital Quality of Life Index 2020, the Philippines lands at the 82nd place, out of 85 spots in terms of internet affordability. The study also reveals that it takes 1,994 seconds of work to get the cheapest mobile internet and 75 minutes of work to afford the cheapest broadband internet in the country (yahoonews.com). In addition to the questions of speed and affordability, the issue of access also comes into play mostly due to the fact that the remote and rural areas in the country are without internet connection, if not extremely poor.

On top of the concerns to transition to remote learning, however, there are deep socio-economic concerns for online learning in a developing country like the Philippines. The students in far-flung areas in the country do not even have roads or electricity, let alone access to computers and the internet. Moreover, given the current internet infrastructure, even students in urban areas have limited internet access. This then results in a “digital divide” between those who do have access and those who do not (Joaquin, Biana, & Dacela, 2020). Furthermore, there is also an issue of social policy. The Philippines does not have a national policy dealing directly with online platforms such as Massive Open Online Courses (MOOCs), Open Distance e-learning (ODEl), and Open Educational Resources (OERs). While there are laws, like the Open Distance Learning Act (Sixteenth Philippine Congress, 2014), which provide legal bases for funding such platforms, they are not enough as “some national policies will have to be put in place to sustain the growth” of these online platforms (Bandalaria, 2019).

Teachers who used to teach in a conventional face-to-face arrangement also needs to update their skills to be able to adopt to a more innovative delivery of content such as writing of content/modules; the use of LMS, MOOCs, and other open source facilities are also among those that needs to be given emphasis. There is a need to capacitate teachers at all levels to be able to respond to effective distance education modality. The Department of Education (DepEd) has reported that they have been training public school teachers in Information and Communications Technology (ICT)-based teaching (Manila Bulletin). The issue of the readiness of content also plays an important role on the success of remote learning. Since the country is just about to adopt this medium, much is to be seen on the result of this year's teaching-learning practices. Reports however are already coming out on the difficulty of both teachers and students in coping with ICT-Based learning.

CONCLUSION

While distance education has a big potential to provide access to higher education among countries in the Asian region much still needs to be done especially if we are to respond to the Education Development Goals as set by UNDP. Given the Pandemic, most countries in Asia employed immediate solution to avoid learning loss and continue learning while on home quarantine. While others are prepared technologically, many in the Region have simply employed some stop gap measure to continue learning during a major global health crisis. Included in those countries is the Philippines, which was actually unprepared to face the outbreak just like many others regions of the world. As reflected in the above discussion, there are many challenges that the Philippine educational sector needs to polish when it comes to making education more accessible and flexible.

There are issues of connectivity, infrastructure, access, content, teachers' training and capability build-up in the use of technology-enabled teaching-learning processes, among others. There is also the challenge on

the absence of government policies to fully support the implementation of a full distance education system. This is in addition to what has already been enumerated above. Since the law on DE also mandates Level III accreditation of all programmes to be offered via ODL, the issue of programme accreditation is another important factor that needs to be assured to guarantee that courses taken via distance are being subjected to relevant quality assurance. It is to be noted that all schools/universities have already employed remote learning modality during this period of Pandemic even those without programme accreditation as the circumstances require.

This is another challenge that the Philippine Higher Education Commission has to attend to as most schools have already veered away from the required Level III accreditation when they offered remote online learning modality. While we understand the impact of COVID-19, higher education institutions should still be responsible for the quality as well as the social, cultural and linguistic relevance of education and the standards of qualifications provided in their name, no matter where or how it is delivered, it is essential therefore that the programmes that they offer are of comparable quality to those being delivered in the conventional mode or even better and that a commitment to this effect should be made known to all stakeholders.

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Chapter 10

**EXPLORING LEARNERS' BEHAVIOURAL
INTENTION TOWARDS MOBILE LEARNING:
A CASE OF CERTIFICATE PROGRAM
OF BANGLADESH OPEN UNIVERSITY**

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ABSTRACT

Users of mobile phones in Bangladesh have been increasing day by day, and the whole country is under the grasp of mobile networks. The institutes are blending various programmes using mobile technology as the mobile devices provide portability and instant connectivity that allows students to study anytime and anywhere. As a distance education institute, Bangladesh Open University (BOU) always adopts technologies based on priority for its educational programmes ranging from certificate to tertiary levels. The main objective of this chapter is to examine the viability of the Technology Acceptance Model (TAM) and recommend to

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extend it within the context of behavioural intention to use mobile learning considering the variables (Self-Efficacy = SE; Social Factors = SF; Major Relevancy = MR; Perceived Usefulness = PU; Perceived Ease of Use = PEU; Attitude = ATT; Behavioural Intention = BI). Both the explorative and descriptive research designs are used to identify the attributes of learners' attitude and find behavioural intentions toward M-learning. The survey was conducted using a structured questionnaire (5-point Likert scale). The study's findings discovered that smartphone is the most popular mobile devices among the respondents at 63%. Mobile internet had the highest percentage at 66%. The primary reason for using mobile devices was to communicate with 38%, and the second reason was to learn at 22%. However, only 2.1% of the respondents always use mobile device for BOU educational materials. The study confirmed that TAM is a suitable model for understanding and explaining the Behavioural Intention to use m-learning in Bangladesh.

Keywords: learners' behavioural intention, mobile learning, technology acceptance model, Bangladesh Open University

INTRODUCTION

Mobile devices have the characteristics of portability, instant connectivity and context-sensitivity, indicating that the mobile devices can be accessed for a variety of information anytime and anywhere. They can be used to find real-time or simulated data (Cheon et al., 2012). In this way, mobile technology has been compatible with distance learning and adopted by the institutes to increase learners' engagement. The institutes use m-learning as the educational tools that make educational delivery more interesting, convenient and interactive. The National Center for Education Statistics (NCES) forecasted in the mid-1990s that the internet had been likely to transform the modes of distance education by updating and replacing it with using internet and computer-mediated mode of delivery (Tang & Austin 2009; Okinda, 2014). M-learning has been found useful to the people who live in remote and rural areas as it provides greater accessibility for e-learning. In line with this, Bangladesh is capitalizing on the benefits of Technology Enabled Learning (TEL),

particularly mobile-based learning, as the entire country has been under mobile network (Iqbal & Qureshi 2012). However, M-learning research is restricted to use in particular fields (Jin, 2007; Jo, 2005; Um & Kim, 2007). A couple of action researches have been done which have less impact on theoretical development. Therefore, to know the behavioural intention, current researches on mobile-based learning in Bangladesh are needed. Consequently, policy-makers and deployers of M-learning are interested in finding its benefits in the education sector. Therefore, to fill this gap, the current study is undertaken in order to understand learners' behavioural intentions in the context of Bangladesh Open University.

AIMS AND OBJECTIVES

The following are the research objectives:

1. to profile the demographic information of the learners of BOU who were the users of mobile phone; and
2. to examine the viability of the Technology Acceptance Model (TAM) and extend it within the context of the behavioural intention of the learners to use mobile learning.

LITERATURE REVIEW

Learners find more advantage in using M-learning than E-learning because mobile technologies and smartphones have the features of all kinds of computer devices (Kukulska-Humle & Traxler, 2005). Therefore, M-learning is a new and independent part of E-learning (Cho, 2007; Keegan, 2002), and the researchers have made an effort to explore the different aspects of M-learning. In the developed countries, different studies have sought to determine the intention to adopt M-learning activities (Huang, Lin, & Chuang, 2007; Wang, Wu & Wang, 2009), while

only a few pieces of research have been undertaken in the context of developing countries (Iqbal & Qureshi, 2012). Most studies on mobile education in developing countries suffer from the absence of a strong theoretical background when explaining learners' intentions toward adopting M-learning (Annan, Ofori-Dwumfuo & Falch, 2012; Tagoe & Abakah, 2014). In most cases, m-learning studies have investigated only educational efficacy using mobile devices (Jung, 2009; Yoon, 2007; Kang, 2007). M-learning can enhance a cognitive environment in which the distance learners can interact with their instructors, consult their course materials in the physical and virtual environment (Keegan, 2005; Koole, 2009; Cochrane & Antonczak, 2014; Saedi, Taghizade & Hatami, 2018; Crompton, Burke & Lin, 2018). M-learning also provides the benefits of mobility; ubiquity; interactivity; accessibility; collaboration; utility; privacy; adaptability; portability; multi-platform; flexibility; and universality (Criollo-C, Luján-Mora, & Jaramillo-Alcázar, 2018). In Bangladesh, the number of mobile and internet subscribers is increasing (Figure 1), and it increased by 9% in 2019 (BTRC 2019), which shows a solid base for M-learning, and declares an environment for testing any technology adoption theory.

The Technology Acceptance Model (TAM) is an explanatory tool in investigating the M-learning processes to justify the factors' influence on behavioural intention (Park, 2009) that encompasses intrinsic and extrinsic motivational factor (Davis, 1989). TAM was originally adapted from the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980; Sánchez-Prieto, Olmos-Migueláñez, & García-Peñalvo, 2016) to explain an individual's intention to accept new information technology (IT). This model is superior to the theory of planned behaviour (TPB) (Ajzen, 1991) for identifying the behavioural intention concerning professions (Chau & Hu 2001; Zain et al., 2005). TAM includes two critical factors—perceived usefulness (PU) and perceived ease-of-use (PEU). It argues that PU is an individual's subjective assessment of improving his or her performance, personal well-being or the technological utility (Davis, Bagozzi, & Warshaw 1989; Ong, Lai, & Wang, 2004; Yang, Zhou, & Liu, 2012), and acts as a stronger player to indicate an individual's intention toward

adopting new technology (Wu & Zhang, 2014). On the other hand, perceived ease-of-use (PEU) has been examined extensively in understanding users' acceptance of technology (Venkatesh & Davis 2000).

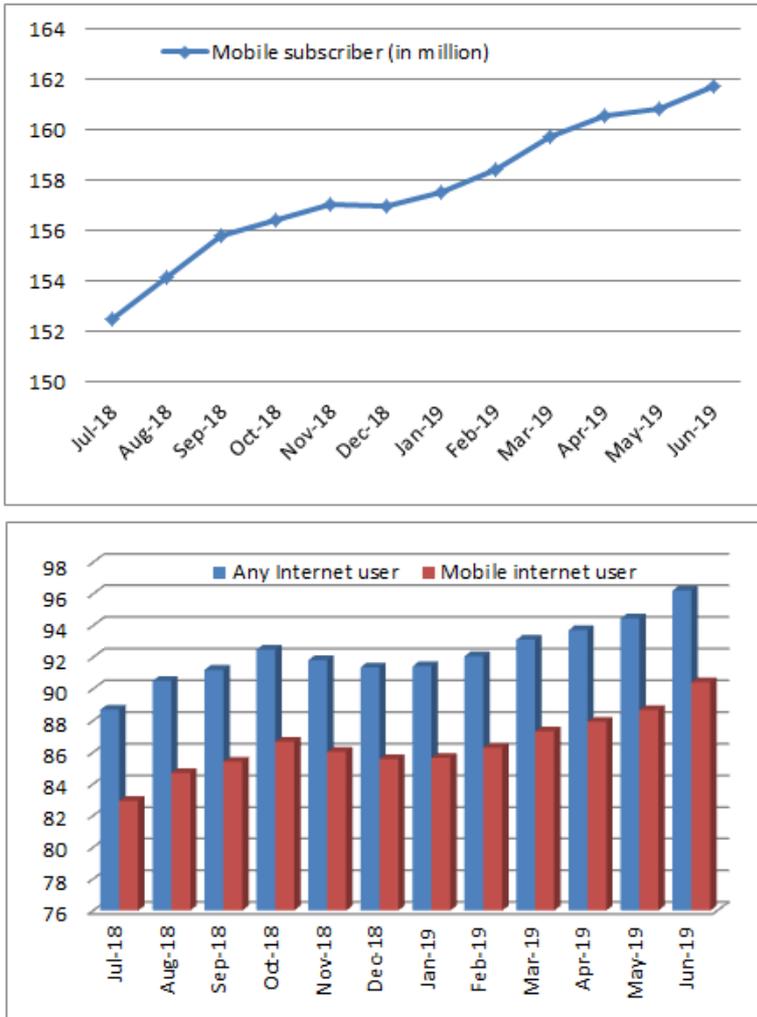


Figure 1. Mobile and Internet Subscribers in Bangladesh (in millions) Source: (BRTC, 2019).

PEU signifies an individual's cognitive efforts for learning through technology (Yang, Zhou & Liu, 2012; Davis, 1989; Wang et al. 2003; Suki & Suki, 2011) and has a positive influence on both the perceived usefulness and the attitude of an individual, while organizational ambience emphasizes an organization's influence or support on one's IT use (Wu & Zhang, 2014; Park, 2009; Van Raaij & Schepers, 2008). There is a direct effect of PU and an indirect effect of PEOU on the virtual learning environment. Li et al. (2012) anticipated TAM after investigating the learners' intention to reuse the e-learning systems (Bandura 1994; Senaratne, Samarasinghe, & Jayewardeneperura, 2019). Cheung and Vogel (2013) showed that PEOU, PU and Attitude (ATT) influenced technology adoption. Shah et al. (2013) investigated the technology acceptance behaviour in Pakistan using TAM and found the infrastructure of E-learning had a direct effect on PU while PEOU had a significant effect on the intention toward the use of E-learning. Rose & Fogarty (2006) tested TAM in predicting the acceptance and use of technology by the senior consumers in Australia and found that self-efficacy; technology discomfort, perceived risk and personal contact determine the PU, PEOU, ATT and Behavioral Intentions (BI) toward the acceptance and use of technologies. Liu et al. (2010) found that TAM strongly affects learners' PU directly and the intention to use online learning by high school learners in Taiwan.

Park, Nam & Cha (2012) found that TAM the factors Social factor (SF), SE, major relevance (MR), system accessibility (SA), subjective norm (SN) with the TAM constructs. Underlying the variable PU, PEOU, ATT are considered the most significant factors among these variables in the context of mobile learning. MR indicates in what context the learners find technology relevant. SF is defined as the degree that individuals' perception of what people important to them consider whether they should adopt a system or perform a certain action (Venkatesh & Bala, 2008). Kanchanatane, Suwanno, & Jarernvongrayab (2014) exposed the effect of PU, PEOU, ATT and perceived compatibility on intention to use e-marketing and found that the effect of attitude toward using e-marketing is the most influential factor that affects the behavioural intention to use e-

marketing in Thailand. Fathema, Shannon and Ross (2015) found that TAM has a significant influence on quality, perceived self-efficacy, and facilitating conditions on the behavioural intention to use LMS. Merchant, Keeney-Kennicutt & Goetz (2015) applied TAM and found that in order to learn Chemistry PU, ATT and perceived enjoyment influence learners' intention to use SL. In contrast, PEU does not have a significant influence on learners' acceptance in the USA.

The above review delineates the following variables, which need to be considered within a framework and research plan (as has been considered in this study):

- 1) BOU policy, along with a change in attitude, and provision of M-learning;
- 2) Learners require additional resource and teaching-learning support for enhancing engagement with mobile technologies;
- 3) M-learning is essential in developing countries to increase access and enhance the quality of learning through collaboration, engagement, and mentoring;
- 4) All the important stakeholders within the government, the institutions, in the teaching-learning support network, in the community level, and the contexts are required to work in tandem within the given implementation TAM framework.

CONCEPTUAL FRAMEWORK

As explained in the literature review, TAM has the weakness of its exclusion of external variables, which may affect users' intention to use technology (Legris, Ingham & Collerete 2003). Therefore, this study adopted Park's (2009) TAM as a baseline model in addition to the original TAM, where SE, MR and SF were added as individual, organizational and social factors, respectively in the model. It is shown in Figure 2, which comprises the variables of SE, SF and MR related to M-learning. These are

included as exogenous variables and M-learning PU, PEU, ATT, and M-learning behaviour as endogenous variables.

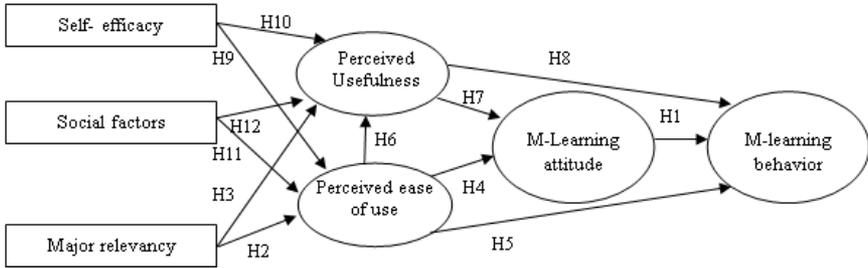


Figure 2. Conceptual Framework for Learners’ Behavioral Intentions.

Based on the conceptual framework, the survey construction is developed that is shown in Table 1 below.

Table 1. Description of the Constructs of the Survey

Construct	Variable Name	Description
Self- Efficacy	SE	It measures if the construct can complete the tasks with the new technology
Social Factors	SF	It measures external influence.
Major Relevancy	MR	It measures the relevancy to use technology
Perceived Usefulness	PU	It measures the usefulness of the technology
Perceived Ease of Use	PEU	It measures the ease of use of the technology
Attitude	ATT	It measures if the new technology is a good idea.
Behavioural Intention	BI	It measures the intention to use the technology in the coming future.

Hypothesis

The hypothesis drawn up within this project is described in Table 2. These hypotheses were based on the other researchers’ previous findings (Briz-Ponce & García-Penalvo 2015; Venkatesh et al. 2003; Zayim & Ozel, 2015).

Table 2. Description of Hypothesis

Hypothesis	Variable Name	Dependent Variable	Independent Variable
H1	ATT -> BI	Behavioural Intention	Attitude
H2	MR -> PEU	Perceived Ease of Use	Major Relevancy
H3	MR -> PU	Perceived Usefulness	Major Relevancy
H4	PEU -> ATT	Attitude	Perceived Ease of Use
H5	PEU -> BI	Behavioural Intention	Perceived Ease of Use
H6	PEU -> PU	Perceived Usefulness	Perceived Ease of Use
H7	PU -> ATT	Attitude	Perceived Usefulness
H8	PU -> BI	Behavioural Intention	Perceived Usefulness
H9	SE -> PEU	Perceived Ease of Use	Self- Efficacy
H10	SE -> PU	Perceived Usefulness	Self- Efficacy
H11	SF -> PEU	Perceived Ease of Use	Social Factors
H12	SF -> PU	Perceived Usefulness	Social Factors

METHODS

The explorative and descriptive research methods were used in the study as the objectives were to identify learners' attitude toward M-learning and then to find the behavioural intentions toward M-learning (Malhotra, 2007). Both qualitative and quantitative data were used from primary and secondary sources. The qualitative data was collected from other available secondary sources like online journals, books, websites and other similar things.

Procedure

The population of this research included all the learners of BOU under HSC programme that was 146960 in number. Considering 95% confidence interval, the recommended sample size was 384 (Raosoft, 2018). The survey questions were distributed to the participants during face-to-face classes of first-year and second-year learners at different study centres of BOU. The sampling method was non-probabilistic (non-randomly),

accidental, or convenience type (McMillan & Schumacher 2001). All the data were obtained from October 2018 to January 2019. A total of 639 responses were obtained, out of which 23 were rejected because of response error. Hence, for the analysis, 616 responses were analyzed.

Instruments

Table 3. Questionnaire Details used in the Study

Construct	ID	Question (Responses based on 5 points Likert Scale)
Self- Efficacy (SE)	SE1	I have the basic skill for mobile learning.
	SE2	I am a skillful user of menu or software for mobile learning with mobile devices.
	SE3	I have confidence in complimentary using mobile devices for mobile learning
Social Factors (SF)	SF1	Mobile learning has significant meaning as a learner.
	SF2	It is necessary to use mobile learning according to recent social trends.
	SF3	I need to experience mobile learning for my career.
Major relevancy (MR)	MR1	Learning with a mobile device is necessary for my study.
	MR2	Learning with a mobile device can help my study.
	MR3	Learning with a mobile device can help to find a job in the future.
Perceived Usefulness (PU)	PU1	Mobile learning would improve my learning performance.
	PU2	Mobile learning can improve the efficiency of learning.
	PU3	Mobile learning has high effects on my learning.
Perceived ease of use (PEU)	PEU1	It is easy to download and save learning contents with mobile devices.
	PEU2	It is easy to use a menu of mobile devices and software.
	PEU3	It is easy to use mobile learning contents.
Attitude (ATT)	ATT1	Studying through mobile learning is a good idea.
	ATT2	I can engage in learning through mobile contents.
	ATT3	I can assess my learning through mobile learning.
Behavioural Intention (BI)	BI1	I have intention to use mobile learning in my study period.
	BI2	I am going to positively utilize mobile learning.
	BI3	I have a continuing interest to use mobile devices for learning and assessment.

The survey consisted of 40 questions grouped into two sections. The first section included 19 questions related to demographic and context

information. This section covered the main independent variables that were analyzed to determine the learners' profile. The second section included 21 items and was designed based on the TAM published by Davis (Davis 1989) and the constructs reported by another article published in order to unify the different versions of the model (Venkatesh, Morris, Davis, & Davis 2003). In addition, this study added one more construct referred to as reliability (Briz-Ponce & García-Penalvo, 2015). The participants were asked to respond to each statement in terms of their own degree of agreement or disagreement, using a 5-point Likert scale. The Likert scale is based on five possible answers ranging from strongly disagree (1) to strongly agree (5). Before the data collection, the instrument was validated by a pilot survey within 50 learners. Table 3 shows the different constructs used to design the survey.

Data Analysis

The structure Equation Model (SEM) technique is a combination of factor analysis and regression or path analysis that is widely used in behavioural sciences (Hox & Bechger, 2009). In this research, a component-based SEM technique (e.g., Partial Least Square) was used between two types of SEM Techniques (Hsu, Chen and Hsieh 2006). The component-based SEM techniques are adequate for investigations with small sample size or a predictive purpose (Chin, 1998). PLS-SEM was chosen for this research as it was less restrictive than the other techniques. It has two components, the measurement model (an outer model) and a structural model (as an inner model). The outer model assesses the quality of all constructs taking into account the measurement's reliability and validity. The inner model estimates the relationships between the different constructs of the model (Hair et al., 2015; Amin, Akter & Azhar, 2016). The software SmartPLS (V. 3) (Ringle et al., 2015) and the SPSS (V.22) were used to computerize all the data for analysis and to obtain the main output indicators relevant for this research.

RESULTS

Learners' Profile

Table 4. shows the percentage of the respondents from the Regional centres of BOU. The highest number of respondents were from Cumilla, which was 16%, whereas the lowest number was the Khulna residents with only 3%. Chottogram, Bagura and Jashore had the second-highest number of respondents at the percentage of 10%.

Table 4. Respondents from Regional Centres

Regional Center	n	Percent
Dhaka	50	8%
Mymensingh	58	9%
Cumilla	100	16%
Chottogram	59	10%
Sylhet	52	8%
Barishal	50	8%
Bagura	60	10%
Rajshahi	50	8%
Jashore	60	10%
Faridpur	56	9%
Khulna	21	3%
Total	616	100%

Table 5. depicts the percentage of the gender of the respondents. A total of 616 respondents were involved in this survey. Among them, 322 (52%) were female respondents and 294 (48%) male respondents.

Table 5. Respondents' Gender

Gender	n	Percent
Male	294	48%
Female	322	52%
Total	616	100%

The age ranges of the respondents are listed in Table 6. The survey had 616 respondents at the age of 16-55. Among them, 66% (409) of the respondents were 16-25 years old. The respondents of the age of 26-35 years were 173 (28%). The age groups of 36-45 and 46-55 had the lowest percentage at 5% and 1%, respectively.

Table 6. Respondents' Age

Age of Learners	n	Percent
16-25	409	66%
26-35	173	28%
36-45	28	5%
46-55	6	1%
Total	616	100%

Table 7 reveals the employability status of the respondents, excluding 7 respondents who were unwilling to respond. The result shows that 33% (204) of the respondents were service holders, and 31% unemployed. Only 3% (19) had other employment than the listed four employments.

Table 7. Respondents' Employability Status

Employability status	n	Percent
Unemployed	188	31%
Service holder	204	33%
Business person	72	12%
Home maker	126	21%
Others	19	3%
Total	609*	100%

*7 respondents do not want to respond.

The family income of the respondents is noted in Table 8. Out of 616 respondents, 15 chose not to disclose their family income. 38.4% (231) of the respondents have a family income of 5001-15000 Bangladeshi Taka, whereas only 1% (6) had responded that their family income falls within the range of 75001-90000 Taka.

Table 8. Respondents' Family Income

Family income	n	Percent
<5000	158	26.3%
5001-15000	231	38.4%
15001-45000	176	29.3%
45001-60000	30	5.0%
75001-90000	6	1.0%
Total	601*	100%

*15 respondents do not want to respond.

Table 9 shows the study year of the respondents. Out of 616 respondents, 418 (67.9%) were in the first year, and 198 (32.1%) were in the second year.

Table 9. Respondents' Study year

Study year	n	Percent
First year	418	67.9%
Second year	198	32.1%
Total	616	100%

Table 10. Respondents' Major

Major subjects	n	Percent
Science	4	0.6%
Arts	511	83.0%
Business Studies	101	16.4%
Total	616	100%

The major subjects of the respondents are listed in Table 10. A huge percentage (83.0%) of the respondents had a major in Arts. Only 0.6% (4) had a major in Science.

Table 11 mostly exhibits the commonly used mobile devices by the respondents. The smartphone is the most popular mobile devices among

the respondents at 63%. The next notable device is the cellphone at 26%. Notebook/Laptop, Netbook, Tablets, E-readers, and others had a percentage within 5%-1%, whereas, iPod/iPad had 0%.

Table 11. Most Commonly Used Mobile Devices (Multiple responses)

Regional Center	Percent
Netbook	2%
Cellphone	26%
iPod/iPad	0%
Smartphone	63%
Tablets	2%
E-readers	1%
Notebook/Laptop	5%
Others	1%
	100%

Table 12 displays the percentage of internet usage. Mobile data had the highest percentage at 66%, and Broadband had the lowest percentage at 2%.

Table 12. Internet Usage (Multiple responses)

Regional Center	Percent
No Internet usage	14%
Mobile data	66%
Wifi	19%
Broadband	2%
	100%

Table 13. Internet Data Usage (Multiple responses)

Internet Data Usage	Percent
Usage as per needed	60%
Usage as daily need	21%
Usage as weekly need	9%
Usage as monthly need	10%
	100.00%

Table 13 presents the percentage of internet data usage. 60% used data as needed. Only 10% and 9% used internet data as monthly and weekly need, respectively.

Table 14 represents the reasons for using Mobile devices in percentage. Communication had the highest percentage of 38%. The second highest at 22% was for learning purposes. Web browsing, socializing and entertaining purposes were within the range of 16%-11%.

**Table 14. Reasons for using Mobile devices
(Multiple responses)**

Reasons for Using Mobile device	Percent
Communication	38%
Web browsing	11%
Socializing	16%
Entertaining	13%
Learning	22%
Others	1%
	100%

Table 15. Most Used Apps/Sides (Multiple responses)

Most used Apps/sites	Percent
Facebook	17%
Whatsapp	3%
Twitter	1%
Viber	2%
Imo	13%
Dictionary	6%
E-mails	3%
Music	9%
Youtube	11%
Games	7%
Instagram	2%
Camera	12%
News sites	6%
Educational software	9%
Others	1%
	100%

Mostly used Apps/Sites are being shown in Table 15. Facebook is the mostly used application (17%). Imo, camera and YouTube had similar percentage at 13%, 12% and 11%, respectively. Educational software had 9% responses.

Figure 3 illustrates the mobile usage for General Learning and BOU Educational Materials. A huge percentage of 48.4% had responded that they used mobile for learning when necessary instead of BOU Educational materials which had 26.9%. Whereas, 22.6% had responded that they never used mobile for BOU educational materials. Only 2.1% had stated that they always use mobile device for BOU Educational Materials and 6.2% had said they always use for general learning.

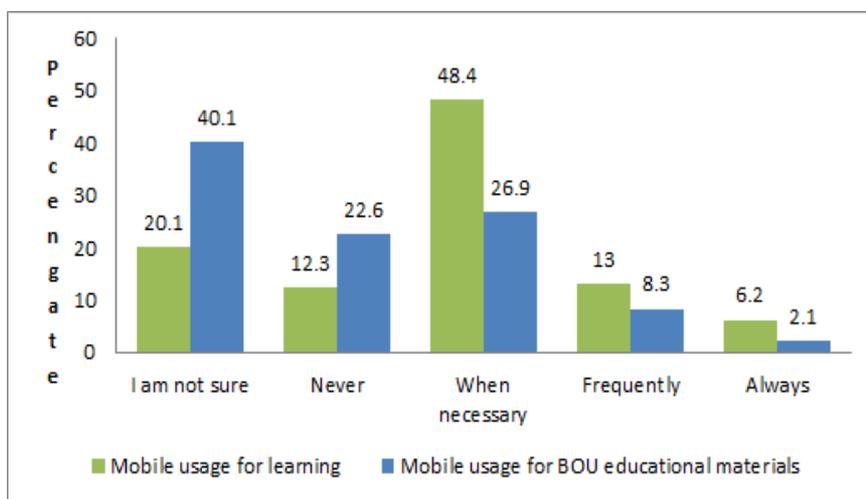


Figure 3. Mobile Usage for General Learning vs. BOU Educational Materials.

Figure 4 depicts the division wise percentage of mobile usage for general learning. Cumilla has the highest mobile usage for general learning at 34.2% whereas, Bagura, Rajshahi and Khulna at 0.0% for general learning. For the Frequently and when necessary options, Cumilla had the highest percentage among the other divisions at 16.3% and 19.5%, respectively. In Bagura, 18.4% never used mobiles for general learning, which is the highest percentage among the other divisions.

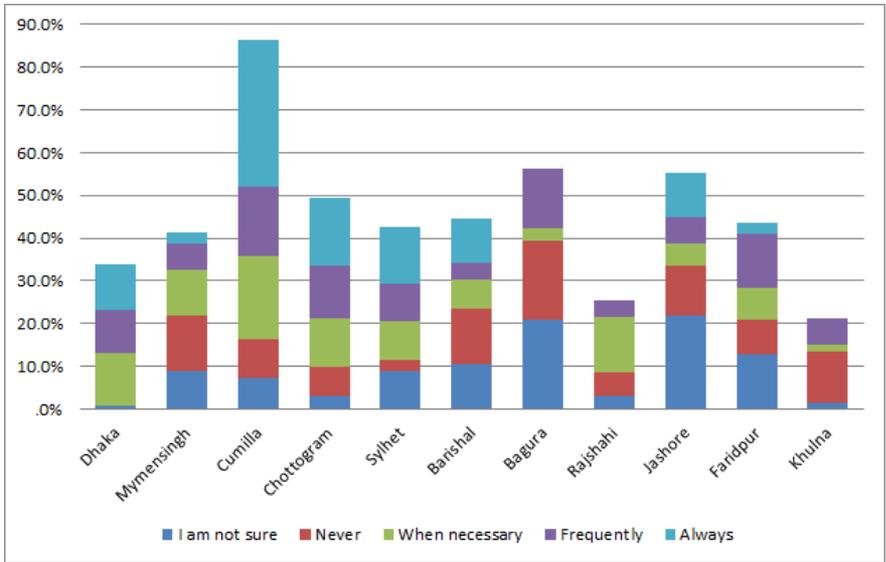


Figure 4. Division wise Mobile Usage for General Learning.

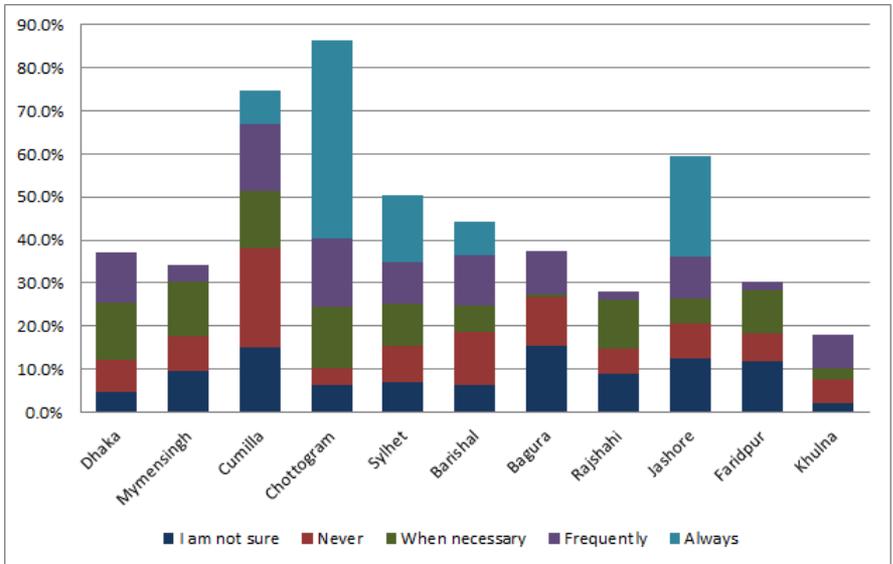


Figure 5. Division wise Mobile Usage for BOU Educational Materials.

Figure 5 represents the percentage of mobile usage for BOU Educational Materials division wise. Chottogram had the most percentage at 46.2% who used mobile for BOU Educational Materials always. Whereas, Dhaka, Mymensingh, Bagura, Rajshahi, Faridpur and Khulna had 0.0%. Cumilla and Chottogram both had 15.7% who use mobile for BOU Educational Materials frequently. Cumilla had the highest percentages (23%) who never used mobile for BOU Educational Materials. On the contrary, Chottogram had the lowest percentage of 3.6% who never used mobile for BOU Educational Materials.

Table 16 displays the reasons for using mobile for learning. The reason “convenient” had the highest percentage at 33.2%. “Easy to share” was the second most popular reasons at 27.7%. Only 1.4% was the reason “others.”

**Table 16. Reasons for Using Mobile for Learning
(Multiple responses)**

Reasons	Percent
Convenient	33.2%
Easy to share	27.7%
Access to internet	15.2%
Interesting and fun	13.2%
To use of memory card	9.3%
Others	1.4%
	100.0%

**Table 17. The ways Respondents Use Mobile Learning
(Multiple responses)**

Method of using	Percent
Downloading contents	28.6%
Reading the online/offline materials	33.9%
Watching audio/video lectures	21.4%
Use of internal files in mobile device	13.7%
Others	2.4%
	100.0%

Table 17 depicts the ways the respondents use mobile learning. Reading the online/offline materials had the highest percentage at 33.9%. Following that, downloading contents had the second most percentage at 28.6%.

Table 18 shows the major places where the respondents use Mobile Learning. A huge percentage of the respondents (72.9%) use Mobile Learning at home. Only 1.7% of the respondents use Mobile Learning on the streets. 13.4% and 10.7% of respondents used during travel and in college.

**Table 18. Major Places Where Respondents Use Mobile Learning
(Multiple responses)**

Major places of using mobile learning	Percent
At house	72.9%
On the streets	1.7%
In college	10.7%
At cyber cafe	1.3%
During travel	13.4%
	100.0%

The measurement model was assessed by examining the internal reliability, convergent validity and discriminant validity. The internal reliability was evaluated by examining Cronbach’s alpha and composite reliability, and a level of 0.70 was considered an indicator of acceptable internal consistency (Hair et al. 1998). The constructs with an average variance extracted (AVE) of at least 0.50 can be assumed to present convergent validity, and a similar assumption can be made if the item loading is well above 0.50 (Hair et al. 1995).

THE MEASUREMENT MODEL

Table 19 shows the loadings, composite reliability, Cronbach’s alpha, and AVE obtained in this study. The item loadings of the seven constructs

(i.e., SE, SF, MR, PU, PEOU, ATT and BI) range from 0.70 to 0.89, which exceeded the recommended threshold of 0.6 (Stevens, 2002). The reliability of the constructs was guaranteed as the values of Cronbach's alpha were all above 0.6, ranged from 0.71 to 0.84, a threshold indicating an acceptable internal consistency (Hair et al., 2006). The results in Table 19 showed that the values of AVE were all above the minimum value of 0.5 (Fornell & Larcker, 1981). Table 20 and 21 presented that all the correlations were less than the square root of AVE. For the model fit, Standardized Root Mean Residual (SRMR) is 0.080, Normed Fit Index (NFI) is 0.708, and Root mean square rms Theta is 0.139. Based on these facts, the measurement model is satisfactory. Table 20. shows the highest loadings of each outer variable in the model.

Table 19. Test for convergent validity

Construct	ID	Factor loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Self- Efficacy (SE)	SE1	0.794	0.710	0.816	0.608
	SE2	0.774			
	SE3	0.732			
Social Factors (SF)	SF1	0.793	0.746	0.840	0.653
	SF2	0.810			
	SF3	0.747			
Major relevancy (MR)	MR1	0.848	0.748	0.856	0.666
	MR2	0.841			
	MR3	0.756			
Perceived Usefulness (PU)	PU1	0.878	0.788	0.876	0.704
	PU2	0.896			
	PU3	0.734			
Perceived ease of use (PEU)	PEU1	0.848	0.802	0.883	0.716
	PEU2	0.848			
	PEU3	0.843			
Attitude (ATT)	ATT1	0.770	0.816	0.862	0.616
	ATT2	0.711			
	ATT3	0.703			
Behavioral Intention (BI)	BI1	0.892	0.843	0.905	0.760
	BI2	0.868			
	BI3	0.856			

Table 20. Indicators from cross-loading

	ATT	BI	MR	PEU	PU	SE	SF
ATT1	0.770	0.519	0.523	0.483	0.504	0.271	0.402
ATT2	0.711	0.360	0.318	0.348	0.369	0.381	0.198
ATT3	0.703	0.352	0.345	0.328	0.362	0.254	0.277
BI1	0.506	0.892	0.544	0.485	0.499	0.284	0.512
BI2	0.459	0.868	0.456	0.409	0.425	0.308	0.472
BI3	0.485	0.856	0.436	0.418	0.420	0.294	0.426
MR1	0.442	0.556	0.848	0.520	0.576	0.300	0.609
MR2	0.426	0.426	0.841	0.482	0.520	0.266	0.519
MR3	0.435	0.356	0.756	0.400	0.555	0.256	0.466
PEU1	0.416	0.471	0.522	0.848	0.525	0.310	0.523
PEU2	0.429	0.392	0.451	0.848	0.391	0.324	0.453
PEU3	0.484	0.409	0.482	0.843	0.472	0.264	0.449
PU1	0.469	0.466	0.623	0.493	0.878	0.280	0.524
PU2	0.496	0.478	0.621	0.492	0.896	0.297	0.509
PU3	0.413	0.341	0.434	0.393	0.734	0.132	0.351
SE1	0.357	0.302	0.320	0.355	0.259	0.794	0.284
SE2	0.305	0.242	0.217	0.218	0.219	0.774	0.166
SE3	0.263	0.288	0.261	0.249	0.197	0.732	0.261
SF1	0.325	0.457	0.549	0.497	0.444	0.291	0.793
SF2	0.324	0.413	0.514	0.508	0.408	0.273	0.810
SF3	0.349	0.416	0.468	0.403	0.388	0.225	0.747

**Table 21. Test for Discriminant Validity
(Fornell-Larcker Criterion)**

	ATT	BI	MR	PEU	PU	SE	SF
ATT	0.688						
BI	0.555	0.872					
MR	0.532	0.552	0.816				
PEU	0.523	0.503	0.575	0.846			
PU	0.549	0.516	0.675	0.551	0.839		
SE	0.397	0.338	0.337	0.353	0.291	0.727	
SF	0.422	0.541	0.654	0.563	0.558	0.301	0.754

Structural Model and Hypotheses Testing:

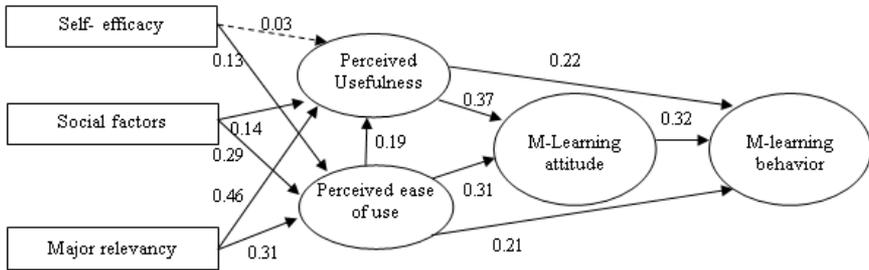
Table 22 shows the hypothesis status of variables. All hypotheses were supported except H10, as the P-value is more than 0.05. The t-value of a parameter indicates the strength of the relationship the parameter presents. The higher t-value indicates a stronger relationship.

Table 22. Hypothesis Status

Hypot he sis	Relationship	Path Coefficient	Standard Deviation (STDEV)	T Values	P Values	Hypothesis Status
H1	ATT -> BI	0.325	0.074	4.373	0.000	Supported
H2	MR -> PEU	0.314	0.057	5.591	0.000	Supported
H3	MR -> PU	0.465	0.071	6.531	0.000	Supported
H4	PEU -> ATT	0.318	0.063	5.010	0.000	Supported
H5	PEU -> BI	0.209	0.070	3.053	0.002	Supported
H6	PEU -> PU	0.199	0.050	3.998	0.000	Supported
H7	PU -> ATT	0.376	0.053	7.111	0.000	Supported
H8	PU -> BI	0.224	0.059	3.740	0.000	Supported
H9	SE -> PEU	0.127	0.041	3.002	0.003	Supported
H10	SE -> PU	0.032	0.042	0.722	0.471	Not supported
H11	SF -> PEU	0.297	0.056	5.254	0.000	Supported
H12	SF -> PU	0.138	0.061	2.217	0.027	Supported

Figure 5 shows the path coefficient of the variables. The figure dictates that PU and PEU are correlated with the SE, SF, MR. PU and PEU also have a relationship with ATT and BI. A structural model was developed to identify the relationships among the constructs. The current research utilized the bootstrapping technique ($p < .05$) to test the hypotheses. The study tested the relationship between explanatory and explained variables by path coefficient (β) and t statistics. Table 22. showed the calculated path coefficients with significance and corresponding t statistics. The results showed that ATT ($\beta = .32$, $t = 4.37$), PEU ($\beta = .21$, $t = 3.05$), and PU ($\beta = .22$, $t = 3.74$) have significant effects on BI. Moreover, PEU endorses positive impact ($\beta = .19$, $t = 3.99$) on PU. Thus, the results are supporting H1, H5, H6, and H8. Furthermore, the results proved that MR ($\beta = .31$, $t =$

5.59), SE ($\beta = .12, t = 3.02$), and SF ($\beta = .29, t = 5.25$) have a positive effect on the PEU of m-learning supporting H2, H9 and H11. Additionally, MR ($\beta = .46, t = 6.53$), and SF ($\beta = .13, t = 2.21$) have positive effect on PU, that support H3 and H12. However, surprisingly, SE ($\beta = .03, t = 0.72, p > .05$) had an insignificant effect on the PEU, contradicting H10. Lastly, PEU ($\beta = .31, t = 5.01$) and PU ($\beta = .37, t = 7.11$) have relationship with ATT, supporting H4 and H7.



Note: R^2 of PEU is 0.414, R^2 of PU is 0.505, R^2 of ATT is 0.371 and R^2 of BI is 0.40.

Figure 5. Path coefficient for Learners’ behavioural intentions.

DISCUSSION

The first objective of the study was to develop the profile of BOU learners. The result showed that the learners used mostly mobile internet for communication and socializing rather than learning purpose. Particularly, the learners in Bangladesh excel at using mobile devices and frequently access wireless internet to get the necessary information. In most cases, they used mobile for learning when they felt it necessary. Moreover, the learners did not prefer to use BOU M-learning materials even if it is necessary, and the reason might be that the learners were not informed about BOU materials. For the second objectives of this study, it confirmed that TAM is a best fit structural model that assists in understanding and explaining BI to use M-learning (Lee, Cheung & Chen 2005; Saadé, Nebebe & Tan, 2007). The study result confirmed that TAM

constructs had both direct and indirect effects on learners' BI to use M-learning.

SE is an intrinsic motivational factor in explaining BI (Park, 2009). According to Bandura's (1994) social motivational theory, higher SE induces a more active learning process. In this study, M-learning SE affected PEU but not PU. The reasons might be that learners found M-learning easy to use but not use it for their learning improvement. As most M-learning materials do not provide any assessment to evaluate the learning progress, learners did not find M-learning's usefulness.

On the other hand, SF may be considered extrinsic motivational factors that influenced BI to use M-learning. This result is similar to earlier studies and is connected with M-learning (Beggs 2000; Marcinkiewicz & Regstad, 1996; Park, 2009). In Bangladesh, people are encouraged to use technology in every field to catch up with the rapid social change caused by the ubiquitous environment. The learners might want to adopt M-learning because they believed it would be beneficial for a future career in society.

MR played a significant role in affecting M-learning PEU and PU. Major relevance may be considered an intrinsic motivational factor to affect ATT and BI because when learners found the learning with mobile devices is relevant to the study improvement, learners felt more interest in adopting m-learning (Park, 2012). PU and PEU had a significant direct effect on ATT and BI to use M-learning in the context of endogenous constructs. ATT was identified as a determinant affecting BI to use M-learning. The study reflected that all participants in the study conveniently used mobile devices for learning. The PEU had an impact on PU, ATT and BI. In contrast, PU had more influence on ATT than BI. ATT influenced BI greater than PEU or PU.

CONCLUSION

This research would help BOU teachers, administrators, and learning content developers in designing and administering educational

programmes involving M-Learning. The research findings suggested that the tutors/teachers should make an effort to boost learners' positive ATT toward M-learning because ATT has the largest direct effect on BI to use M-learning. As SF is directly related to ATT, the university should inform the learners that M-learning experience is necessary according to recent social needs/career. A high-quality wireless internet environment such as Wi-Fi zones should be constructed in the study centres of BOU to increase convenience. Moreover, by providing inexpensive mobile devices, including smartphones, the number of M-learners can be increased. Both online and offline supports such as an online mentor system, forum and other similar things are needed to increase learners' positive ATT toward M-learning. Diversified and interactive mobile learning courses and user-friendly Learning Management System (LMS) should be developed by which learners can learn and assess themselves.

BOU needs to advertise the benefits of M-learning to attract more learners. However, this research opens a new path for future comparative studies to be conducted to identify whether or not a difference exists between mobile users and non-mobile users with TAM. Besides, it is necessary to include instructors and tutors perspectives of BOU. Their perception and adoption processes should also be taken into account in designing an M-learning support programme. Moreover, it is suggested that learners' M-learning readiness should be determined in different universities covering urban and rural areas.

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Chapter 11

**COMMUNITY AND ODL INSTITUTIONS:
EXPERIENCES FROM TANZANIA**

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ABSTRACT

Due to the potential of Open and Distance Learning (ODL) and the limited research on community engagement with the ODL institutions, this chapter intends to examine the community and the ODL institutions in the context of Tanzania and what other countries can learn from Tanzania. While writing the chapter, the literature review approach and documentary research method were adopted. The findings reveal that the community through its engagement with the ODL institutions can be categorised in three major groups—individuals, institutions and government. The findings imply that the community, which engages with

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the ODL institutions, is diverse and calls for inclusiveness in higher education. Therefore, the stakeholders in the educational sector can increase their efforts towards building a more inclusive platform for the engagement of the community with the ODL institutions that honours the Sustainable Development Goals (SDGs) by contributing to the socio-economic development of the society. Future research can expand this study by applying quantitative and qualitative approaches to further understand the phenomenon.

Keywords: community, ODL institutions, Tanzania, South Asia, South East Asia

INTRODUCTION

The Open and Distance Learning (ODL) institutions exist in various countries in Africa including those in Southern African Development Community (SADC) such as Botswana, Namibia, Tanzania and Zimbabwe (Biao, 2012; Peter, 2017; Musingafi, et al. 2015; SADC 2009). In Africa, ODL was motivated by the inability of numerous qualified candidates to access tertiary education in regular or formal tertiary education institutions (Baio, 2012). Furthermore, the growth of ODL is attributed to advantages like flexibility for students who wish to study while working (Baloyi, 2017). Several scholars (Bynoe, Mazumdar & Mkwizu, 1973 & 2007; Mkwizu, 2019; Mkwizu & Ngaruko, 2019) noted the need for universities to communicate its researches with the community and also through networking and collaboration research. Other scholars (Armijo, 2005; Bridger & Alter, 2006; Matarrita-Cascante & Brenan, 2012; Hudson, 2013; Thompson, 2014; Ahmadabadi, 2016; Wood, 2016; Muse, 2018; Findler et al. 2019) investigated the community in relation to education as they are interested in the concept of community from the developmental perspective. Matarrita-Cascante and Brenan (2012) pointed out that there is a need to conceptualise community development in the 21st century by providing a conceptual definition of community development that will serve both the academics and practitioners. This shows that the phenomenon of community engagement with higher education is critical

and hence more research is needed. This further motivated this current study to examine the presence of the community in the ODL institutions in Tanzania and also what the higher educational institutions in South Asia and South East Asian countries can learn from Tanzania.

METHODS

A literature review approach and documentary research method are used in this study. The documentary research method is used to gather information from journal articles, books, reports and conference papers along with the literature on the connection between the community and ODL in the field of higher education.

Theoretical Framework

This paper is guided by the Social Network Theory developed by Jacob Moreno in 1930s and further developed by Elton Mayo and Kurt Lewin (Knox et al. 2006). The Social network theory is built on the conceptualisation of nodes, actors in a network, ties and relations existing between those actors (Gilde, 2014). In Gilde (2014), the social network theory is grounded on three principles, which are namely—

- the behaviour of nodes is influenced by the behaviour of other nodes in the network- meaning that the nodes are mutually dependent;
- the ties between the nodes on the basis of the exchanges of both goods and ideas that imply that ties channel the transmission of information through the network;
- ties have the ability to create structures among the actors in the network that can influence their behaviour.

Furthermore, Gilde (2014) noted that social network theoretical concepts can be researched in the context of individuals, organisations and states.

The social network theory has been applied in other fields of studies such as Health in the study by Valente & Pitts (2017). Apart from the theory's application in Health, other fields of research like Tourism, Human Resource Development and Social Sciences in general have also found the social network theory relevant as opined by Dunn (1983), Scott (2000), Storberg-Walker & Gubbins (2007), Scott, Baggio & Cooper (2008a, 2008b), Sih et al. (2009), Hansen (2009), Borgatti et al. (2014), Kitts (2014), Liu et al. (2017), Littlewood & Khan (2018), Han et al. (2019), Shi et al. (2020), & Viridi et al. (2020). The research conducted by Schultz-Jones (2009) applied social network theory to examine information behaviour and found that with the growth of information science and other disciplines in research, the social network theory has been broadly used in many disciplines. Similarly, the study in India by Viridi et al. (2020) used social network theory and found that social-gratification is one of the core themes, which is an enabler of the consumer's acceptance of social recommendations. Social network theory has also been used in education by Daly (2010) who examined this theory in terms of the educational changes with particular focus on schools. Therefore, while writing this chapter, the theory is kept in mind.

WHAT IS A COMMUNITY?

A community has been referred to as the homogenous and distinct units with a common identity (Barraket, 2004). Ahmadabadi (2016) defined a community in terms of the services and stated that community services are aimed at developing the community potentials so as to achieve societal goals. The concept of community has been termed by the sociologists using three elements, which are a physical place, a local society and a collective action (Hillery, 1955; Bender, 1978; Wilkinson, 1991). Based on the definition of the community by these sociologists,

Bridger & Alter (2006) summarised the sociologists' definition of community as a physically bounded territory where people meet most of their daily needs, interact with others in a variety of organisations, and express common interests through various actions and activities. Scholars such as Barnes et al. (2006), and Doherty & Beaton (2000) mentioned that the community is not limited to geographical neighbourhood group, and that an individual may belong to multiple communities like virtual communities, faith communities and special-interest communities. The stakeholders are considered the element of the community (Matarrita-Cascante & Brennan 2012). Furthermore, in conceptualising a community in the context of community development in the 21st century, the term community is defined in terms of community development due to its engagement in economic development (Matarrita-Cascante & Brennan 2012). Hence, in this study, the community refers to stakeholders such as individuals, institutions and also the government.

ODL INSTITUTIONS

Open and Distance Learning (ODL) refers to a way of providing learning opportunities that is characterised by the separation of teacher and learner in time, or place or both time and place; learning that is certified in some way by an institution or agency; learning that uses a variety of media including print and electronic, two way communication that allows learners and tutors to interact; learning that provides a possibility of occasional face to face meetings and a specialised division of labour in the production and delivery of course (Commonwealth of Learning, 2019). ODL is considered an important approach in resolving the problems of access, quality and equity (SADC, 2009).

An example of an ODL institution in Africa is The Open University of Tanzania (OUT) in Tanzania, which in 2019, had seen the enrolment of 147,238 students (OUT 2019a). Another example of ODL institution in Africa is Zimbabwe Open University in Zimbabwe and University of South Africa (UNISA) which is the largest ODL institution in Africa as

well as the longest standing and dedicated distance education university in the world (UNISA, 2020). OUT has 32 regional centres and 81 study centres as of 2020 within Tanzania but it has also expanded beyond the Tanzania borders with coordinating centres in Kenya, Namibia, Malawi, Uganda, Zambia, Democratic Republic of Congo, South Sudan and Ghana (OUT, 2019b).

On the other hand, Rajesh (2010) gave examples of ODL institutions in South Asia countries and these are—Indira Gandhi National Open University (IGNOU) in India, Bangladesh Open University (BOU) in Bangladesh, Alama Iqbal Open University (AIU) in Pakistan, and Open University of Sri Lanka (OUSL) in Sri Lanka and so on. These ODL institutions in South Asia had students' enrolment in millions (Rajesh, 2010). Furthermore, IGNOU was recorded as the leading ODL institution in South Asia in terms of learners' enrolment in 2010 but also in terms of the number of regional centres and learning support centres (Rajesh, 2010) spread across India and abroad. So, for the purpose of this chapter, ODL institutions refer to higher education institutions or agencies that provide educational programmes through the ODL mode.

COMMUNITY AND ODL INSTITUTIONS

Previous literature on ODL institutions focus on issues related to gender, information, communication strategy, capacity building, ICT, authorship and collaborative research (Peter, 2017; SADC, 2009; Rahman, 2014; Mkwizu & Ngaruko, 2019). A study by Rahman (2014) conducted in Bangladesh on the use of ICTs in ODL concluded that the application of technology in education is not the ultimate goal but it should be used to pursue quality. Rahman further mentioned that ICT has the potential to help many countries address issues of access to learning, quality of teaching-learning process and management of the education systems.

SADC (2009) noted that in most member states, the participation rate in higher education is lower than 5% of the eligible age group, and that, only three member states achieved any sizable higher education provision.

In addition, the member states that have achieved a sizeable provision for higher education are South Africa, Tanzania and Zimbabwe. However, on a global scale, the growth of ODL is attributed to two factors, which are technological advances that allowed more subjects to be taught at a distance, and the need for ongoing skills upgrading and retraining (SADC, 2009). SADC (2009) provided a framework at the regional level to guide education projects in SADC, for example, SADC Regional Indicative Strategic Development Plan (RISDP) which is a policy document that provides strategic direction and focus for future programmes as well as intensifies regional integration within the SADC.

Some organisations and associations have also assisted in promoting ODL. For example, UNESCO, DEASA and SADC-CDE as well as donor agencies such as DFID, DANIDA and USAID (SADC, 2009) have played an important role in spreading the cause of ODL. Within Africa, the African Development Bank (ADB) also provided financial support into ODL project for capacity building (SADC, 2009) of various kinds. For Nigeria, the study in higher education for universities focused on students' utilisation of social media (Abanikannda, 2019) as opposed to the community. The findings revealed that the sampled undergraduate students had statistically significant differences on the utilisation of social media concepts between those undergraduate students in private universities versus public universities. Further results indicated that those undergraduate students from private universities have high levels of utilisation of social media concepts compared to those in public universities.

Marais & Schalkwyk (2017) carried out research on community ODL engagement using a qualitative approach and the study concluded that the ODL lecturers need to support untrained teachers through ODL teaching-learning strategies in order to become qualified teachers. Others scholars were also interested in discussing the individual and institutional support in ODL in the Hellenic Open University in Greece (Lionarakis et al. 2018). Lionarakis et al. argued that the support services in higher education need to be organised in three levels which are individual, institutional and societal which is also one of the main argument in the current chapter.

COMMUNITY AND ODL INSTITUTIONS IN TANZANIA

The African Council for Distance Education (ACDE) showed that in Tanzania, there are nine ODL institutions which provide ODL programmes (ACDE, 2019). These are—Moshi University College of Cooperative and Business Studies (MUCCoBS) which is now Moshi Co-operative University (MoCU); Institute of Adult Education (IAE); INADES–Formation; Sokoine University of Agriculture (SUA); Southern Africa Extension Unit (SAEU); The Tanzania Global Development Learning Centre (TGDLG); Distance Education Association of Tanzania (DEATA); The Open University of Tanzania (OUT); and University of Dar es Salaam (UDSM). According to Twaakyondo (2008), low tuition fees is often mentioned by students as the most important reason to study at OUT. While INADES-Formation, known as IF-Tanzania, provides ODL programmes to farmers and rural-based development workers (ACDE, 2019).

Table 1. Community and ODL Institutions in Tanzania

ODL Institutions	Community (Individuals)	Community (Institutions)	Community (Government)
Moshi Co-operative University (MoCU)	Cooperative Inspectors, Employees of Cooperative Societies		Through establishment
Institute of Adult Education (IAE)	Teachers, Primary and Secondary Leavers, Dropouts, Workers		Through establishment
INADES – Formation	Secondary School Leavers, Farmers, and Rural-based Development Workers.		Through establishment
ODL Institutions	Community (Individuals)	Community (Institutions)	Community (Government)
Sokoine University of Agriculture (SUA)	Students, Field and Operational staff, Farmers and Community Leaders	e.g., TANAPA, Institute of Tropical Medicine, Agrosciences Ltd.	Through establishment.
Southern Africa Extension Unit (SAEU)	Students in exile i.e.,- Foreign Youths from countries such as Angola, Botswana, Burundi, South Africa, Uganda, Zambia and Zimbabwe		Through establishment

ODL Institutions	Community (Individuals)	Community (Institutions)	Community (Government)
The Tanzania Global Development Learning Centre (TGDLC)	Government Employees, Executives (managers, senior managers)	e.g., Association of African Distance Learning Centre (AADLC)	Through establishment
Distance Education Association of Tanzania (DEATA)	Professionals	e.g., Ministry of Education and Culture	Through establishment
The Open University of Tanzania (OUT)	Employed staff, Disadvantaged Groups, School leavers, Non-professional Teachers.	e.g., Danish Fellowship Centre (DFC), Korea University, TANAPA,	Through establishment
University of Dar es Salaam (UDSM)	Students	e.g., SIDA	Through establishment

Source: Compiled from ACDE (2019), MoCU (2019), SUA (2019), Ngaruko (2019).

The TGDLC mainly provides courses to the executives and IAE provides ODL programmes to primary and secondary school leavers (ACDE 2019). Although these nine ODL institutions provide ODL programmes, OUT with a total cumulative student enrolment of 92,568 has qualified as the largest tertiary education institution in the country (ACDE 2019). There are also non-professional teachers who are engaged with ODL institutions (Ngaruko, 2019). The summary of community and ODL institutions in Tanzania is provided in Table 1.

HIGHER EDUCATION INSTITUTIONS IN SOUTH ASIAN AND SOUTH EAST ASIAN COUNTRIES

There is substantial literature on higher education institutions in South Asian and South East Asian countries such as Lee & Healy (2006), Chet (2006), Olds & Robertson (2014), Songkiao & Yeong (2016), Cheng (2017), & Sharma (2019). For instance, Lee (2007) noted that all countries in South Asia, except Thailand, have a colonial history, and that their education systems have been influenced by the colonial heritage. Songkiao & Yeong (2016) indicated that there are challenges in higher education in South East Asia, and Association of Southeast Asian Nations (ASEAN)

from an international perspective and these challenges include massification of higher education at the national level, privatisation and internationalisation. Songkaeo & Yeong (2016) added that there are challenges regarding how to integrate the private sector in a way that does not undermine the quality of education, and how much autonomy universities should have when government funding is limited and universities are not able to be self-reliant. For example, Brunei and Singapore focus on “well-rounded” graduates with life-long learning skills while Indonesia, Malaysia and Thailand show concern on lifelong learning skills only.

Other scholars have also noted the challenges of privatisation in higher education in South East Asia/ASEAN (Lee, 2015; Varghese, 2015; Chao, 2013). Chao (2013) had noted that in higher education, the national boundaries are disappearing within a global higher education market and that the new methods of delivering higher education services such as Massive Open Online Courses (MOOCs) are also increasing. Adding to the challenges by universities, the study by Garcha, Mkwizu & Sharma (2020) conducted in India using a qualitative approach found that mooKIT as a form of MOOCs is useful in teaching and learning and has been used during the COVID-19 to enable participants attend online courses in situations where universities were physically closed as a result of the COVID-19 pandemic. Lee (2015) suggested that privatisation means adopting management practices associated with private business like outsourcing. In contributing to literature on higher education, Sugimura (2012) noted that both regional education networks and universities cooperation programmes develop in multi-layers and in different phases, and therefore, have a function distribution of Asian higher education as public goods for regionalisation. The regionalisation is through the concept of Campus Asia for the Asian international universities that engage in intra-regional and inter-regional cooperation. However, Sugimura (2012) cited that certain obstacles still exist such as programmes’ mobility, language and immigration control of people. Sugimura (2012) further commented that retaining the autonomy of the countries and higher education agencies in international cooperation is a challenge in promoting

the programmes. In 2019, Symaco & Chao discussed further the international and comparative education in East and South East Asia including ASEAN through different organisations, networks and programmes. The observed suggestions were that there are opportunities and policy orientations in education (Symaco & Chao 2019).

From the reviewed literature (Lee, 2007; Sugimura, 2012; Lee, 2015; Songkao & Yeong, 2016; Symaco & Chao, 2019), it is evident that there are challenges in the higher education institutions in South East and South East Asian countries. Therefore, from the literature consulted on the challenges facing the higher education institutions in countries such as Indonesia and Malaysia, this study is motivated to examine what higher education institutions in South Asian and South East Asian countries can learn from Tanzania.

DISCUSSION

Studies on ODL institutions in Tanzania are evident as indicated by ACDE (2019). Further review of literature, has revealed that the community through engagement with the ODL institutions can be categorised in three major groups, which are individuals, institutions and the government.

Individuals engaged with the ODL institutions comprise school leavers, teachers, dropouts, community leaders, counselors, employed staff, government employees, professionals, youths in exile, farmers, executives, cooperative inspectors, and disadvantaged groups like the disabled. In addition, individuals who are students mainly engage with the ODL institutions because of affordability. The study by Twaakyondo (2008) confirmed that the most important reason for students studying at OUT is low tuition fees.

At the institutional level, for instance, organisations such as Agro Studies Ltd. collaborate with Sokoine University of Agriculture (SUA). Equally, for OUT, agencies such as Tanzania National Parks (TANAPA) have been engaged with OUT through sponsorship in tourism conferences

hosted by OUT (OUT, 2019b); and also TANAPA recently engaged with SUA through their ‘TANAPA Tourism Awards’ whereby SUA received the award in the category of outstanding research to promote the tourism sector and wildlife conservation (SUA, 2019); and DFC engaging as a funding organisation for research projects at OUT (OUT, 2018).

On the other hand, at the Government level, it has engaged with the ODL institutions through establishments. For instance, SUA was established by the Parliament Act No. 6 of 1984 while OUT was established by Act No. 17 of 1992 (ACDE, 2019). This implies that the three categories of community engagement in ODL institutions are diverse in nature with various individuals who are mostly teachers, dropouts to professionals. The government through legislation has enabled a number of ODL institutions to be established in order to provide ODL programmes.

Studying community engagement with the ODL institutions by individuals, institutions and the government also means one is looking at a social network existing between individuals, institutions, and the Government. The social network theory assumes that there are actors in a network and relations exist between those actors. This study, as already explained, examined the relationship between the community and ODL institutions guided by social network theory. It is revealed that in the context of Tanzania, community engagement with the ODL institutions increased over time, affording OUT the status of being the largest tertiary institution in Tanzania and doing better than the other ODL institutions such as IAE and UDSM.

In addition, the literature from South Asia and South East Asian countries from the perspective of higher education indicates that the biggest challenges in the higher education institutions include regional education networks as cited by Sugimura (2012). Whereas this is a challenge, in Tanzania, the case has been different from the perspective of the ODL institutions, in particular OUT, where a blended approach in the expansion to other regions has been applied. For example, the idea of coordination enables OUT to extend their education services to the neighbouring countries and thus afford the university to provide and offer

various education programmes to both the continuing and prospective students.

CONCLUSION

This study examined how the community is engaged with the ODL institutions. From the reviewed literature, this study reveals that the community's engagement with the ODL institutions can be categorised into three groups which are individuals, institutions and the government. This study further reveals that with time, from a social networking perspective, community engagement with the ODL institutions has increased as in the case of OUT. ACDE (2019) mentioned that OUT secured the status of being the largest tertiary institution in Tanzania. The increase in community engagement with OUT as an institution providing ODL programmes signifies that despite OUT being established only in 1992, OUT has outperformed other ODL institutions providing ODL programmes, and thus becoming the largest tertiary institution in Tanzania. The rise of the community institution also enabled OUT to secure a position of the largest tertiary institution in Tanzania which has implications to assisting other ODL institutions and the educational sector to increase efforts that reflect an inclusive platform for community engagement in the ODL institutions and thus honour the Sustainable Development Goals (SDGs) in contributing to the socio-economic development of the society.

So what can other higher education institutions across different parts of the world learn from Tanzania? Based on the outcome of the study, OUT which is an ODL institution in Tanzania has diversity in terms of community categories, which are individuals, institutions and the government. OUT has not only adopted a regional centre approach to grow but has gone beyond the country using the coordination centre approach to expand ODL to other countries within Africa. Therefore, other higher education institutions can learn this approach from Tanzania by defining the categories of communities and also by blending the regional centre

approach with coordination centre approach to enhance the cooperation among the higher education institutions including the ODL institutions in their regions. Future research can expand this study to engage quantitative and qualitative approaches to understanding the phenomenon of community and the ODL institutions from the community engagement perspective.

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Chapter 12

**ACCESS AND PARTICIPATION FACTORS
IN ONLINE DISTANCE NURSING EDUCATION
PROGRAMME DURING A MAJOR PANDEMIC:
THE STUDENT-NURSE IN VIEW**

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ABSTRACT

With the global health crisis, COVID-19 brought University education under siege. The situation became even worse for the specialised and practical subjects or programmes that strive on the need for ‘physical’ or ‘real’ observations and or manipulations of experiences. This chapter identifies and explains the factors that affected access and participation of the undergraduate student-nurses who are also practising professional nurses in the rollout of a fully online Distance Nursing Education programme. This study, which was ontologically and

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epistemologically situated within the critical realist philosophy, took place at the University of Ghana and underpinned by the Mezirow's (1978) Transformational Learning Theory. Twelve participants were involved in individual telephonic semi-structured interview. The study found technology and professional practice to be the common factors that affected both access and participation of the student-nurses on the Distance Education (DE) programme. Factors found to affect access to online Distance Nursing Education programme are institution, faculty, peers, family support and resources. The participants revealed that their work shift schedules, practical lecture sessions, family demands, teaching learning and examinations timetabling are factors that affected it. This chapter strongly recommends a revisit to the curriculum design for online Distance Nursing Education programme. Again, the need for substantial investments into technological infrastructure and the capacity building of staff and students in innovative ways of using technology for nursing education in DE are highly recommended.

Keywords: Distance Education, Nursing Education, Online Distance Nursing Education Programme, Student-Nurse, Transformational Learning Theory

INTRODUCTION

Pandemics can sometimes cause collateral damage. The Coronavirus (COVID-19) pandemic has not just been a global emergency crisis, but a strong 'weapon' of mass destruction of lives, properties, culture, values and society, among other things. There is no denying the fact that the pandemic has disrupted a lot of the routine activities across the globe. Especially for the health practitioners and researchers, who serve as the frontline 'soldiers' against an emergent crisis, the excesses of the pandemic have had a toll on their duties, personal and public lives, exposing them to higher risks. Some nurses, midwives, doctors and allied health workers have lost their lives along with the members of the family, friends and loved ones from the infections the health professionals brought from their workplace (Khanal et al. 2020).

One major consequence of the pandemic is its perilous effect on education across all levels. Generally, schools in the Ghana, Germany,

India, Italy, South Africa, Spain and the United States of America were closed to avoid further spread of the virus (Couzin-Frankel, 2020; Gaur et al. 2020; Schleicher, 2020). In India, the President imposed the Janata curfew (citizens' restrictions) and closed schools for the same purpose of curbing the virus spread. In Ghana, schools were closed, and the President of the Republic encouraged educational institutions to consider the use of technology and Distance Education (DE) to complete the school year if the institutions could leverage on that. The blended DE mode deployed by the University of Ghana was immediately switched to a fully online mode.

The Bachelor of Science (BSc) Nursing at the University of Ghana is the only nursing programme offered by DE in Ghana and in fact, it is one of the 'hotcake' programmes. The programme is highly sought after because getting study leave to access regular-based nursing education is difficult and highly competitive due to the insufficient number of working nurses in the field. The BSc Nursing DE programme offers a unique opportunity to the employers to retain their employee nurses while also enabling them to directly use the knowledge, attitudes and skills they acquire from the classroom into the job. This therefore discourages further widening of the nursing deficit gap—a gap that is not just a problem in Ghana but in Africa, Asia and perhaps the entire world. Despite the 2019 intake of 27,809 fresh students into 31 public and private post-secondary (pre-university) programmes at the Nursing and Midwifery Training Colleges in Ghana (NAB, 2020), the country is still not likely to eliminate the shortage of nursing and midwifery professionals. The observation is consistent with the World Health Organization (2020) which has reported on the short supply of nurses and midwives. They noted—"for all countries to reach Sustainable Development Goal (SDG) 3 on health and well-being, it is estimated that the world will need an additional 9 million nurses and midwives by the year 2030."

Based on the above discussions, it is natural that the pre-university nursing professionals crave for capacity building and further studies at the university that directly affects their experiences, promotions and remuneration. On the other hand, there are more nursing professionals with pre-university qualifications than the available opportunities to access

university degree nursing programmes. These later statements among others offer the exclusive option to the pre-university nursing professionals to upgrade their studies through DE be it in the national or international levels. Despite the opportunities for further studies in nursing through DE, access and participation of student-nurses require a thorough interrogation especially during the outbreak COVID-19 pandemic and its associated nuances. This is largely because most of these student-nurses performed their professional duties as frontline health workers, active online student-nurses and functional family members during the heat of the pandemic.

Largely, studies on online nursing education have not covered access and participation of students during pandemics. Tagoe & Cole (2020) focused on the different outcomes of the engagement of the student-nurses with the Sakai Learning Management System, peers, and instructors. Alsoufi et al. (2020) projected a continuous disruption in medical education due to a possible second wave of the pandemic, hence, the need to embrace online health education through capacity building programmes to minimise the effects of the pandemic. In a study conducted in Spain, Ramos-Morcillo, et al. (2020) found out that online nursing education was not an extension of the traditional mode of teaching and learning, thus the result of many factors. For instance, they also reported that demography, family activities, the nursing occupation and availability of resources were the factors identified to have influenced the online nursing education during the COVID-19 pandemic. Smith, Passmore, & Faught (2009) identified unique challenges with online nursing programmes that take away the authentic learning experiences by compromising high-stake medical and interpersonal elements of nursing education. Notably, Lee & Choi (2011) had cited student, course or programme and environmental factors as the issues that affected students' attrition rate on online education.

This chapter therefore supports the arguments advanced by Alsoufi, et al. (2020) in a study conducted in India. Their view was that "COVID-19 pandemic presents substantial challenges for medical education, and instructors must deliver lectures safely, while also ensuring the integrity and continuity of the medical education process." Ramos-Morcillo et al.

(2020) asserted that the restrictions imposed by online education due to students' background as adult learners, their being part of the marginalised and working class sections, their family obligations and limited electronic resources deepened by COVID-19 etc. should be addressed in the ensuing academic years.

Several studies on the migration to online mode of delivery during this pandemic reported on myriad of issues (Burgess 2020; Gaur, 2020; Shenoy, Mahendra, & Vijay, 2020). This study conducted for the purpose of the chapter therefore focused on *access* and *participation* of the pre-university nursing qualification holders, who are also practising professionals and are, at the same time, first degree DE nursing students in Ghana. Considering the afore-going discussion, this study is important because, not much research has been conducted on online nursing education via DE during a crisis like the COVID-19 Pandemic.

OBJECTIVES

The following are the objectives of the paper:

1. To identify the factors that affect students' access in a nursing education programme conducted fully through DE during a pandemic.
2. To identify the factors that affect students' participation in a nursing education programme conducted fully through DE during a pandemic.
3. To explain the linkages of factors that affect students' access in a nursing education programme conducted fully through DE during a pandemic.
4. To explain the relationships emerging from the factors that affect students' participation in a nursing education programme conducted fully through DE during a pandemic.

RESEARCH QUESTIONS

1. What factors affect students' access in a nursing education programme conducted fully through DE during a pandemic?
2. What are the factors that affect students' participation in a nursing education programme conducted fully through DE during a pandemic?
3. How are the factors that affect students' access in a nursing education programme conducted fully through DE during a pandemic linked?
4. How are the factors that affect students' participation in a nursing education programme conducted fully through DE during a pandemic linked?

LITERATURE REVIEW

Generally, access and participation in higher education are much discussed because they are linked to man power and capacity development. Different technologies have been used to bridge the gap between accessibility and participation in higher education (Aheto, 2017; Duval, Sharples, & Sutherland, 2017; Heeks, 2010; Hew & Cheung 2012). Topical technological issues affecting online education range from Device Ownership (Aheto & Cronjé, 2018), Mobile Moodle Learning Management Systems (Mtebe & Kondoro, 2016) and infrastructure (Johnson, et al. 2016).

The discussions on access and participation become intense when it draws on professional training in higher education such as in case of law, accounting, medicine, pharmacy, nursing and midwifery. But, capacity building and continuous professional development is an integral part of every profession like nursing. However, regular nursing education for the practising professionals is one of the ways that take the nurses away from their work for the period of their studies. It appears that the projections of

WHO (2020) on the need for 9 million nurses and midwives by the year 2030 may not be realised. Measures adopted to have enough nurses who are posted is mirrored by how study leave issues are managed (Kwansah, et al. 2012).

Having a practical professional programme, the regular traditional campus-based way of expanding access to nursing education at the higher education level limits innovation and widens the gap caused by the shortage in the supply of nurses. The sandwich, modular and DE mode of nursing educational programmes have become the innovative ways of creating educational access while limiting further shortage of nurses who are already posted as they can concurrently study and work. Among the various modes of nursing education, DE has been used to sustain the continuation of nursing education (Macintosh, 1993).

The findings in some researches have lauded the whole idea of online Distance Nursing Education programme. Reports have also demonstrated the associated challenges inhibiting the delivery of this innovation. The research conducted by Marcyjanik & Zorn (2011) raised the major challenges with the universal design and appraisal systems that did not favour online distance nursing education for persons with disabilities (PWD). Students' request for technology to enable them access technology also influenced their participation in the course (Aheto, 2017; Moule, Ward, & Lockyer, 2011). Furthermore, Wishart, & Ward (2002) asserted that the student-nurses feared the use of computers, which might be accounted for by other factors.

The phobia for computer usage by the student nurses may reflect the limited or absence of practical computer or technology driven clinical courses. In the United Kingdom, computer applications form a significant part of the standards of proficiency for pre-registration nursing education (UKCC, 2015). Involvement of the student nurses in the deployment DE programmes is important and not new. The research done by Macintosh's (1993) was "purposed to implement a study that includes the increase involvement of student-nurses located in the distance education settings, to implement principles of adult learning, to increase opportunities for

drawing on the experience of the students, and to improve the quality of learning experience offered by distance education.”

Therefore, observing the activities of a student-nurse in an online distance nursing education programme, who is at the same time an active frontline health professional, several questions occur in mind. Hence, in this chapter, the issues of access and participation of the students of distance nursing education during a pandemic, which otherwise remain mostly unexplored, are sought to be discussed in some detail.

CONCEPTUAL FRAMEWORK

The conceptual framework provides for a migrated blended DE mode of nursing education to a fully online distance nursing education programme during a pandemic. This framework is conceived to be hinged on two main pillars, namely-access and participation. The following Figure is the conceptual framework that guided the analysis of this study.

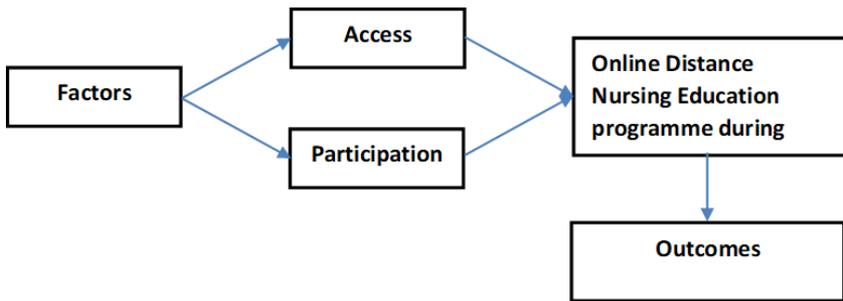


Figure 1. Conceptual framework of factors that affect Online Nursing Distance Education programme during a pandemic.

It is also conceived that some of the factors are likely to overlap the issues about access and participation. Cumulatively, the interaction between the student-nurses, their access and participation in the online programme during the pandemic, also help to explain the emerging patterns from their experiences. The ‘outcomes’ section of the framework

captures the intended and unintended results of the interaction of the factors in the online programme during a pandemic.

METHODS

The study is qualitative and used the case study research design. It was positioned within the critical realist paradigm and guided by the Mezirow's (1978) Transformative Learning Theory. The purpose of the study is to identify and explain the factors that affected access and participation of the undergraduate student-nurses who were nursing professional in the rollout of a nursing education programme conducted fully through DE at the University of Ghana. Qualitative case study research design is best used for explaining social research in narrative formats (Babbie, 2005). The purpose of this study was to addresses the constructs, access and participation in online distance nursing education programme within the social context in Ghana.

Students pursuing Bachelor of Science Nursing degree formed the population of the study. The first participant was purposefully selected after which all other 11 participants were sampled based on the snowball sampling technique. A semi-structured interview guide was self-developed. The interview items were shared with 2 colleagues who are experts in qualitative research. The guide was then used on 3 persons which helped in standardising the interview guide (Vangronsveld & Linton, 2012). Data was gathered through telephonic interviews, which lasted for an average minimum of 30 minutes. The telephonic method of interviewing was selected because:

1. It was a way of guaranteeing social distancing so that both the interviewer and the interviewee do not contract COVID-19 from a physical engagement in the event of one of them getting infected.
2. It was appropriate and a convenient way of reaching the participants due to the issues of Lockdown and how busy they had been at the time of data collection.

3. The calls were initiated from the interviewers and the participants did not have to spend any cost on the calls.
4. The environment was devoid of intimidating physical environment. One limitation was that the body gestures, that could be observed for inferences during analysis, was absent.

Data Analysis

For such a study, thematic analysis was utilised because of the systematic framework and rigour it provided for visualising the patterns from analysing rich data for qualitative research (Booth, Sutton, & Papaioannou, 2016; Harden, et al. 2006; Thomas & Harden, 2008). Data analysis followed a 5-stage approach to analysing qualitative data as suggested by Yin (2011). The stages are data compilation, disassembling, reassembling, interpretation and conclusion.

First, the recorded calls or interview transcripts were organised making them ready for coding (Braun & Clarke, 2014; Saldaña, 2015).

Second, at the disassembled stage, the individual transcripts were coded by identifying the key words, phrases and sentences related to participants' experiences in terms of access and participation of nursing education via online Distance Education (Charmaz, 2011; Glaser, 1978; Strauss, 1987).

Third, was the reassembled stage of data. The codes that were generated were then clustered and categorised into themes (Saunders, Lewis, & Thornhill 2012). Richards & Morse (2007) posit that "categorization of data is what helps researchers make meaning, find concepts from a highly diverse but general to a higher-level abstract construct."

Fourth, the emerging patterns and connections from them were examined and interpreted at this stage. At the conclusion and fifth stage, Yin (2011) proposed a recap of all the stages from stage 1 to stage 4 and how the data was handled at each stage.

RESULTS

From the conceptual framework in Figure 1 which had four main components, namely, *Factors*, *Constructs*, *Online distance nursing education programme* and *Outcome*, the results of the study are pictorially summarised and presented in Figure 2.

Altogether, 10 themes (factors) were associated with students’ access and participation in the online distance nursing education programme emerged from the individual telephonic interviews. Three factors that influenced students’ access to the online programme are the nature of access to faculty, peers, family. Practical sessions, age of students and home situation were also found to be the factors that influence participation of the students. 4 of the remaining factors (technology, institution, work shift schedule and resources) overlapped both access and participation constructs. Interestingly, the outcome yielded four products that went beyond the purpose of delivering nursing education covering General Education, Health Education and Technology Education.

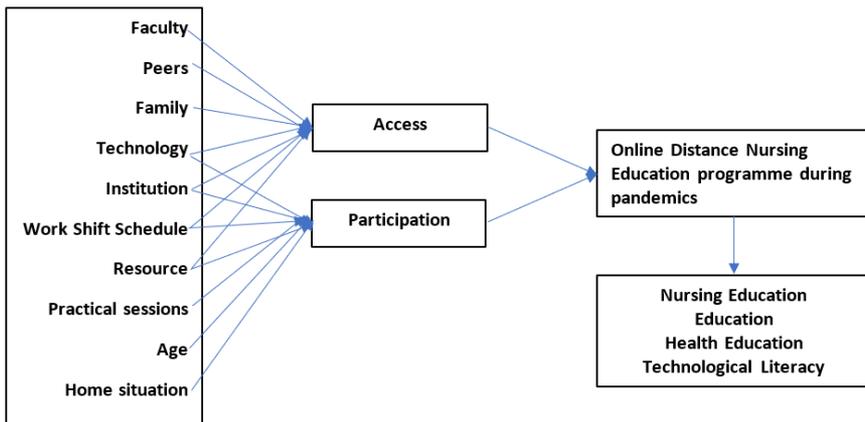


Figure 2. Factors that affect Online Nursing Distance Education programme during a pandemic.

Common Factors That Affect Both Access and Participation to Online Distance Nursing Education

The common factors that affected access and participation in the online distance nursing education programme are Technology, Institution, Work schedule shift and Resources.

Technology

Technology came up strongly as a factor that influenced students' involvement in the online distance nursing education programme. Generally, the students rated technology as a positive factor that advanced their access and participation in the nursing programme. Technology also posed impediments to other students who believed they could have performed better in the face-to-face or sit-in classrooms. On the positive side, a student said that: Technology made it possible for me to study and work at the same time. My woes of travelling through traffic in Accra right after night shift duty was reduced to zero.

Another student also indicated the level of participation technological tools afforded him or her: For once, I got the opportunity to watch and review lectures I had missed. The use of Chatroom and Forum tools on Sakai were put to maximum use to handle my questions.

A student felt that it was time to leverage on technology to wave off some of the bureaucracies of the traditional way of nursing delivery: Apart from the stress to study and work, I think this is the greatest lesson COVID-19 has taught us. We have the technology, but some of our fields are very conservative and will not want to take advantage of online activities.

Even though students generally admitted that technology was a good servant, 1 student pointed to their positive and negative experiences with technology: This time, one was not restricted to travel to the Learning Centre to submit assignments or take a course or two for the day. However, I experienced several challenges with the live lecture streaming on Zoom. Sometimes, I faced login problems with the LMS [sic] even in times when

I had to submit a common assignment, I am unable, due to Internet access in my location.

Another student had these to express: For me, I will not pretend to say that I enjoyed this online thing. The stress was just too much for me. The saddest aspect too was that I had to sometimes work for long hours under strict nursing care and COVID protocols so how was it going to be possible to enjoy ‘Zoom lectures’ when I was fully dressed in my Personal Protective Gear. Personally, I think we could have just suspended the programme for a while because we needed to serve two masters and as you know, saving life cannot be postponed but education can.

Institution

1 student gave a high rating to their institution for the migration and support system from their institutions. According to this student: The university did well to provide us with the necessary support with training, SIM cards with a monthly 5 GB data bundle which had a zero rating of Sakai LMS, all the university and educational sites.

Furthermore, a student appreciated the communication strategies put in place to address students’ issues: This university seamlessly handled the transition from blended to online in a way other could not. My fears began when I sensed heard that classes were going to continue but through online. These were difficult moments for me because I worked at a busy hospital in the capital with stressful COVID cases during the lockdown. However, the communication and updates were solid and kept me informed. The Announcement and E-mail tools on Sakai were very helpful for regular updates.

Work Shift Schedule

The work shift schedule did not support most of the students. The period of the pandemic did not only bring them more work but took a lot of their time. Students on day shift duty during weekends could not participate in the synchronous lectures. Despite having the videos, some of them felt that the synchronous lectures were more natural because they could ask questions and get instant response. Some of the observations

made by one of the students include: With the night shifts on Fridays and the weekends, I felt very tired for my live lectures because, the online interaction run almost throughout Saturday and Sunday.

The work shift schedule was a concern to this student who wanted to enjoy the synchronous part of an online distance nursing education programme: Watching the videos were great but very boring because, you don't have the chance to directly ask a question for immediate feedback. Whenever my off days fell on a weekend, it was easy for me to fully participate in the tutorials.

Resources

Distance education of any form needs a lot of resource mobilisation on the part of students, instructors and the institution. On the part of the students, device ownership, access to some course materials and library affected their participation on the programme. Regarding resources, one student responded like this: I was forced to buy a computer, because one needed a good computer for this online business. Some of my mates used their mobile phones but I do not think that is helpful to some of us due to the calls that easily slip through the phone during tutorials.

Though most library materials could be accessed via online systems, it is interesting to note that the physical usage of the library spaces for learning matter so much to students. I am a library-loving person, now I must adapt to the online library resources, but I miss the serene environment and sitting places our libraries offer.

Accessibility to Online Distance Nursing Education during COVID-19

The support from Faculty, Peers and Family were found to be the factors that affected students' accessibility and experiences with the online distance nursing education during the pandemic. The students felt closer to and supported by their faculty and peers. On the other hand, not all

students enjoyed the same and needed family support to enable them access and participate in the programme.

Faculty

The online platform bridged the gap between the lecturers and the students. The students expressed satisfaction with how closer they came to the lecturers due to the pandemic. Hitherto, one needed to book appointments to get certain issues clarified: The lecturers became closer to us than before. Some of them shared their personal phone numbers with us while others were almost always available to attend to our questions in the Sakai chatroom. Some lecturers gave us access to their assistants and shared enormous reading materials with us compared to the previous.

Peers

During face-to-face interaction, it is very common to see study groups naturally evolving to help the student-members. Generally, the students have shown satisfaction to the kind of peer support they received for the online programme. For 1 student, the support came in the form of resource sharing. In her words: This has been my best time receiving peer support. Our WhatsApp page was very active. Friends shared a lot of resources through voice notes, documents, announcements and many more. I never knew my colleagues could be that generous.

Peer support was identified by the students to create synergy for academic progress. The situation of peers became the motivation for other students to succeed. This is what one student shared: I will say that the support from friends was highly encouraging. People shared their stories and it boosted my moral. For example, two colleagues in my group who were infected with COVID-19 and later quarantined never gave up their studies so this got me inspired and I think with that I progressed.

Some students felt pressurised and thought their colleagues were raising the bar. This may come as a result of unfamiliarity with the course guide and limited preparation for the topics. Accordingly, 1 student recalled: Some of my friends caused me too much panic with what they

shared in our Chat room. They made you sometimes feel ill-prepared for the course all because you are busy saving lives.

Family

Family factor played both positive and negative roles in ensuring access and participation to the online distance nursing education programme. While a student revealed his views about the family support, another experienced dislikes: A lot of family support was served to me. My husband always took care of our young baby to enable me access tutorials. Without family support, I wonder how I was going to be part of the journey.

On the contrary, and as stated by another student, she had minimal family support for her course. She indicated: Studying, managing COVID patients and managing family all around the same time is the most hectic life I have ever experienced. As a single parent, my family became an obstacle to my studies. I missed some sessions and at a point, it became difficult to catch up. I almost deferred his course.

PARTICIPATION IN ONLINE DISTANCE NURSING EDUCATION DURING COVID 19 PANDEMIC

The analysis found Practical sessions, Age of the students and Home situation to be the main factors that affected students' participation in the online distance nursing education programme during the COVID 19 pandemic.

Practical Sessions

The students said they missed their practical sessions. It is their expectations, technology would be used to support their practical and hands-on sessions in emergent situations when physical contacts become impossible. One of the students indicated: I think that we need to explore alternative ways of training health professionals. Assuming this disease

stays with us for long, will the current method of training health professionals be sustainable?” Similarly, another participant lamented and said: Though I always go to the ward, what I missed most is the practical sessions where I learn new things.

Age

DE has a history where its chief patrons had been adults. The situation of having just adult learners filling the vacancies of DE classrooms is fast eroding. For some of the adults, age was perceived to be the impediment for their inactive participation in the online programme. They generally conceive of online education to be just education that favoured the younger ones. In her words, this student held: This ICT, ICT thing, hmmm, it is not for some of us [sic] look at my age, at home, my kids must help me with typing and downloading of relevant materials. I am trying but it is not easy.

Home Situation

Obviously, in Ghana, having a study or dedicated room for academic work at home is not widespread. The fully online course sparked by an emergency is likely to affect the performance of some students. Due to the lockdown, most families had no excuses not to be together at home. Such a situation did not create conducive learning environments for some students. The workplace was already ‘plagued’ with health issues and no time for resting. In some situations, both the parent (who is the student-nurse) and the children had to compete with the use of devices such as computer for online classes. One student admitted: Online learning is good, but the timing was not the best for people like us. I had all my 3 kids at home and we all had to participate in our various online classes with just one computer at home. Our house set-up had to be re-arranged. Don’t forget I had to perform my marital duties as well. Just imagine this.

DISCUSSION

Participation in an online educational programme can only be possible when it is fundamentally made accessible to the actors on the online programme. From the above results presented, to a large extent, the institution created the environment for nursing education to be accessible and participatory to the students. One way was the provision of SIM cards with a 5GB monthly Internet data bundle besides whitelisting the LMS and various educational sites for free use. Results from the interviews show that technology was used to bridge the gaps in accessibility and participation to nursing education.

This finding can be corroborated by earlier research by Duval, Sharples, & Sutherland (2017); Heeks (2010); Hew & Cheung (2012). The students had the opportunity to use and reuse content from previous lecture recordings. However, as noted by Aheto & Cronjé (2018), this study affirms the fact that device ownership continues to remain a major challenge and threat to accessibility and participation to online education. It was noted in the results that to enable full participation, one of the students had to purchase a device while another shared a laptop with the children.

Even though technology created seamless opportunities for the online education to happen, other students were also deprived of their right to learn based on two reasons:

1. Technological ownership and hitches, and
2. The heavy work schedule due to the pandemic.

The institutional arrangement of providing SIM cards with a monthly 5GB of Internet data bundle is a demonstration of creating access but did not guarantee that access nor the participation it intended. Some of the students who had a secured access to the technologies did not have time to participate in the programme.

It was observed that during the pandemic, it was rare to have teaching and learning stacked with just one technology such as the Learning

Management System. This observation can be explained by how the behavioural (changes due to the pandemic) dimension of Transformational Learning Theory came to play. Apart from the Announcement, Forum, Chatroom tools on Sakai, WhatsApp and telephone were also used to compliment the Sakai Learning Management System. The finding suggests consistency with Mtebe & Kondoro (2016), who assert that there is a widespread adoption of LMS but with limited exploitation. This is something the institution should consider always.

Unlike the results from Wishart & Ward (2002) on student-nurses who feared the use of the computer, one student used age as a concern to discourage online distance nursing education and this may just be an excuse. Perhaps, like the UKCC (2015) standards, computer applications should be a significant part of the standards of proficiency for pre-registration in any online nursing education.

CONCLUSION

This chapter was concerned about identifying and explaining the factors that affected *access* and *participation* of the undergraduate student-nurses who are also practising professional nurses in the rollout of a fully online Distance Nursing Education programme. Four factors-*Technology*, *Institution*, *Workshift schedule* and *Resources* were identified as they affected both access and participation in online distance nursing education. Faculty, Peers and Family were the factors responsible for Access and practical sessions, Age and Home situation for participation. In the author's estimation, the natural factors included how peer and family support organically worked for or against accessibility to the online programme. Again, socially, technology became the order of the day to make sure that the status-quo is maintained and there is continuity in teaching and learning. Social events about how the home situation was managed to enable participation was visible too.

This chapter demonstrated that the student-nurses experienced psychological, convictional and behavioural dimensions of Mezirow's

(1978) Transformational Learning Theory. At the psychological level, the students had to multitask, think of device ownership, and deal with technological and home situations to make progress. At the Convictional level, the student-nurses had no option to try their best to access and participate in the online programme by peer encouragement even in situations where friends and family were quarantined or lost. At the behavioural level, the migration from a blended to a fully online nursing programme came with several unconscious factors that affected students' experiences. In the end, the purpose of the migration to an online programme yielded additional results. The students felt they had gained more beyond the scope of the Nursing Education and this may include how some of them must adjust in the use of the library. The other additional outcome i.e., Health Education had to do with the kind of direct transfer of classroom knowledge to practice during the pandemic, which did not necessarily relate to nursing care. Finally, the students had to add to their skills in technology, for instance, searching and sharing documents, exploring other emerging technologies and the prudent use of recorded lectures.

Finally, without prejudice and for the sake of quality, generally, some people are of the view that more workload provided will justify quality of learning. However, in time of a pandemic, one must not forget the social role these nurses play in the community. Some student-nurses will obviously struggle with time and space to complete their numerous assessments even if not well balanced with realistic timelines.

RECOMMENDATIONS

This chapter recommends that curriculum design for online distance nursing education programme be revisited. The design should take into consideration unique and flexible communication channels and management of online nursing programmes during pandemics. Again, there is the need for the National Health Services to engage the Universities for work-study programmes to reduce attrition, help close the

nursing and midwifery deficit gap of 9 million by 2030. Proficiency in basic computing usage should be made a strict pre-requisite to BSc. Nursing programmes. Finally, substantial investments into technological infrastructure and capacity building of the staff and students in innovative ways of using technology for online distance nursing education are highly recommended.

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Chapter 13

**OPEN AND DISTANCE EDUCATION
IN BRAZIL: A SCENARIO OF CONTRASTS**

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ABSTRACT

The acceleration of the culture that the pandemic imposed on the whole world includes the urgency of a paradigmatic break in the field of education. Most schools and universities still rely on models created to meet the needs of 18th century industrial society, with medieval rituals and practices of a bureaucratic, exclusive and meritocratic nature. In Brazil, unless there is a complete reconfiguration of the higher education system now in force, it will be very difficult to see a short-term transformation that favours open education and better quality distance education, capable of taking the population to a new educational level. This chapter presents a brief overview of distance education in Brazilian higher education and tries to relate the urgent needs of the world of work in that country with a greater dissemination of open education, to be adopted both in formal education and in corporate education, facing the demands of the digital Economy.

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Keywords: distance education, higher education, open education, Brazil

INTRODUCTION

Brazil faces challenges similar to those of some countries in Asia, given the risks and opportunities present in the *Information Society*. The acceleration of the culture promoted with the adoption of *Information and Communication Technologies (ICT)*, especially after the advent of the Internet, had had profound impact on human relationships, environmental impacts and impact on the digital economy. The growing demand for access to Higher Education added to the need for universities and colleges to reinvent themselves, without losing their essence, in dialogue with companies, governments and civil society. Therefore, public policies will need to be aligned to guarantee the quality of the offer, the expansion of access to Higher Education and the alignment of the institutions with the ongoing changes related to the future of work. The automation of production processes is growing, whether in the industrial, agribusiness or services sectors, putting at risk millions of people not adequately qualified for the new work profile that appears and which eliminates functions based on more repetitive tasks.

The acceleration of the culture that the pandemic imposed on the world includes the urgency of a paradigmatic break in the field of education. Most schools and universities still rely on models created to meet the needs of 18th century industrial society, with medieval rituals and practices of a bureaucratic, exclusive and meritocratic nature. Their forms, modes of organisation and procedures refer to those used in monasteries, military barracks and penitentiaries. The physical and psychological discipline imposed on students is combined with the assumption that everyone should learn the same things, in the same way and at the same times, without the possibility of protagonism on the part of the students, in a model that is not open to personalising the teaching and learning relationships.

The result is the fragmentation of knowledge, the inability to generate meaningful learning, the misalignment in relation to a world increasingly characterised by the assumptions of the knowledge-intensive economy. A lot of people who manage to complete their journeys in high school or Higher Education in Brazil have deficits so severe in their education that they have little chance of entering the world of work, either through employability or workability. *Workability* is an approach that takes into account the condition of greater fluidity, increasingly present in labor relations, when articulating the development of competences and skills that privilege the conditions of the individual to be able to provide services to different organisations or to act in their own enterprise, with increasingly shorter bonds and contracts, usually restricted to specific tasks.

OBJECTIVES

The objective of the chapter is to present a brief overview of distance education in the context of Brazilian higher education. The chapter will also try to relate the urgent needs of the world of work in that country with a greater dissemination of open education, to be adopted both in formal education and in corporate education, facing the demands of the digital Economy.

METHODS

The author does an integrative review of literature and the most recent official data related to distance education in Brazil to synthesise the results obtained in a systematic, orderly and comprehensive way. It provides broader information on the topic, constituting a body of knowledge for the definition of concepts and review of public policies now adopted.

DISCUSSION

Higher Education in Brazil has some characteristics that seem unique in the world. The National Education Plan 2014-2024, a law in force in the country, determines as a goal that the average schooling of the population between 18 and 29 years old must be high, in order to reach, at least, 12 years of study in the last year of School among the populations of the countryside, of the region with less education in the country and of the 25% most impoverished, and to equal the average education between blacks and non-blacks. And, also, raise the gross enrollment rate in higher education to 50% and the net rate to 33% of the population aged 18 to 24, ensuring the quality of the offer and expansion to at least 40% (forty percent) new registrations in the public segment.

However, in 2019, the average number of years of study for the population aged 18 to 29 years in Brazil was 9 years among the 25% most impoverished and 11 years for blacks, while whites reached 12 years of study. It is worth mentioning that 56.10% of the population is the percentage of people who declare themselves black in Brazil. Of the country's 209.2 million inhabitants, 19.2 million are black, while 89.7 million declare themselves brown, with some level of miscegenation (IBGE, 2020). Blacks - which IBGE conceptualises as the sum of blacks and browns-are, therefore, the majority of the population. For the first time in history, thanks to some public *affirmative action* policies gradually implemented in the last decade, blacks are the majority of the students in Brazilian public institutions of Higher Education, which are free of charge. The percentage reached upto 50.3% in 2018 (IBGE, 2019). The majority, that is-73.54%, of the 3 million blacks and browns who are in Higher Education in Brazil study in private universities, which are paid (MEC, 2019).

In Brazil, the proportion of people aged 25 or over who completed compulsory basic education - that is, completed at least high school - reached 48.8% in 2019. The percentage of the people with complete higher education went from 16.5% in 2018 to 17.4% in 2019. In the same year, the schooling rate of people aged 18-24, regardless of the course attended,

was 32.4%, a statistically stable percentage compared to 2018. In turn, only 21.4% of these young people attended Higher Education courses and 11.0% were late, attending some of the Basic Education courses, of which 63, 5% did not attend any school or university (IBGE, 2020).

In 2019, 23.8 million people aged 15 to 29 with an education level up to incomplete higher education did not attend school, vocational education or pre-university entrance courses. Of these, 58.1% had completed high school or did not complete higher education and 41.9% were uneducated or with almost incomplete high school. In the same year, there were 46.9 million people in Brazil from 15 to 29 years old. Among these people, 14.2% were employed and studying; 22.1% were neither working nor studying; 28.1% were not employed, but were studying; and 35.6% were employed and not studying. It is worth remembering that raising the education and qualification of the young people is a way to combat the significant educational inequality in the country. In addition, especially in an unfavorable economic context, increasing the education of the young people and expanding their qualification can facilitate their insertion in the labour market, reduce low-quality jobs and high turnover (Ibid., 2020).

Higher Education in Brazil is offered by the universities, university centres and colleges which may be public or private, with or without profit. Three types of degrees are offered: bachelor's degree (4 + years), teachers formation (3 + years) and technological training (2 + years). Postgraduate courses are organised in *lato sensu* (1 + years), which includes MBA, and *stricto sensu*, másters (2 + years) and doctorates (4 + years). Of the total of 2,608 higher education institutions (HEIs) in Brazil, 88.4% are private. Among the private HEIs, colleges predominate (83.8%), with little dedication to research. The 198 existing universities in Brazil are equivalent to 7.6% of the total of HEIs. On the other hand, 52.2% of undergraduate enrollments are concentrated in universities. Despite the high number of colleges, only 19.0% of undergraduate students are enrolled in them (MEC, 2020).

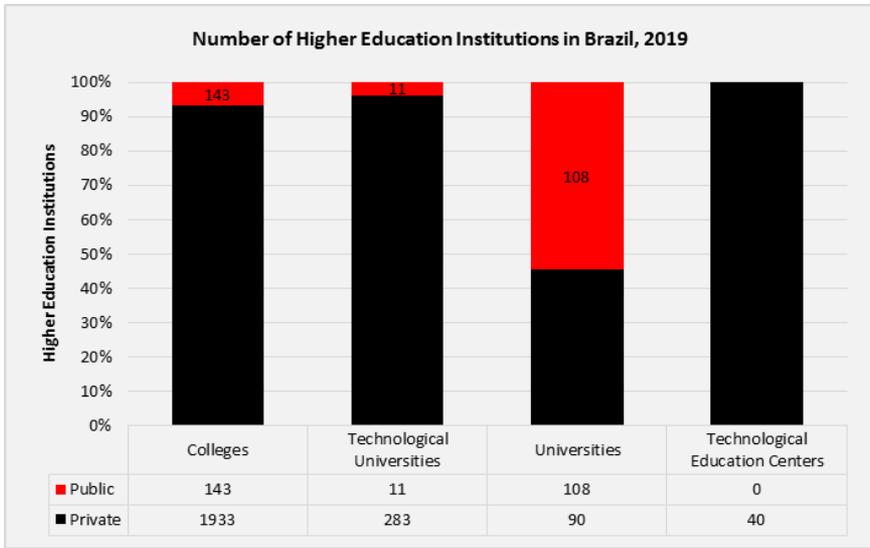


Figure 1. Number of Higher Education Institutions, by Academic Organisation and Administrative Category in Brazil 2019.

Also according to MEC, the source of the data below, of the 8,603,824 students enrolled in Higher Education in Brazil, considering face-to-face and distance learning, 75.8% are in the private network - see Figure 1.

The percentage of enrollments in the private network with some type of financing or scholarship granted by the Federal Government was 45.6% in 2019. The night shift (part-time students) is the one with most students enrolled in on-campus undergraduate courses. Students enrolled in baccalaureate courses are mostly in the face-to-face modality. In distance education, undergraduate courses predominate. The baccalaureate courses continue to concentrate the majority of those entering higher education (57.1%), followed by technological courses (22.7%) and teacher formation courses (20.2%).

Between 2009 and 2019, the number of enrollments increased positively by 17.8% in on-campus undergraduate courses, and in distance courses, it increased by 378.9%. While the percentage of participation of those entering distance education undergraduate courses in 2009 was 16.1%, the participation rate in 2019 increased upto 43.8%. Between 2009 and 2019, the enrollment in distance-learning undergraduate courses

increased upto 192.4%, while in face-to-face mode, it was only 20.3% in the same period. The total enrolment in distance learning undergraduate courses reached 2,450,264 in 2019 - see Figure 2. -that is, 28.48% of the total. The number of distance-learning undergraduate courses jumped from 1,662 in 2016 to 4,529 in 2019, thanks to greater flexibility in legislation that allowed the rapid expansion of the number of institutions that were accredited for the offer of distance learning (Ibid., 2020). The forecast is that the percentage of students in distance learning courses will exceed the university population in face-to-face courses in 2024, and this trend may accelerate due to the effects brought about by the COVID-19 pandemic.

The Brazilian population reached 211,755,692 in 2019. Among those between 19 and 39 years of age, there are 34,558,528 who have just completed high school. There is an increasing number of people enrolled over the age of 40, especially in distance learning undergraduate courses.

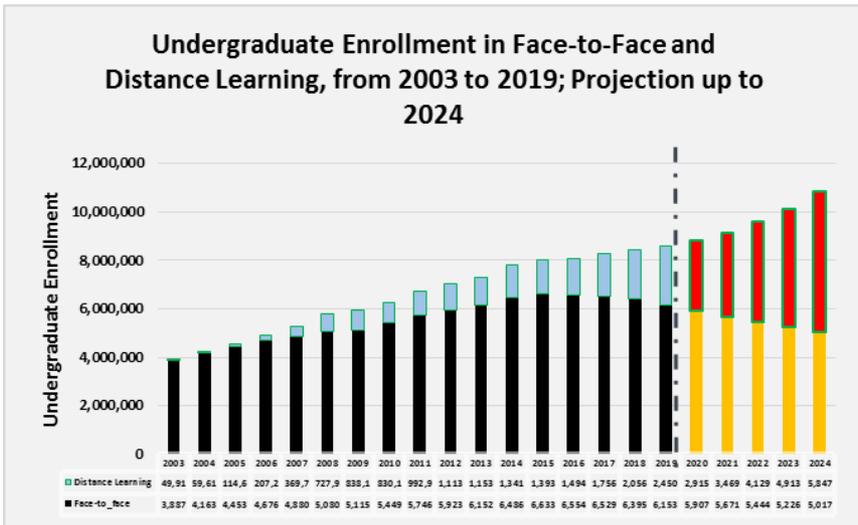


Figure 2. Undergraaduate Enrollment in Face to Face and Distance Learning, from 2003 to 2019 in Brazil-Projection Upto 2024.

To the predominance of enrollment in the private institutions of higher education in Brazil is added a characteristic that is very peculiar to the country, the presence of large business groups, most of which are publicly traded companies or with participation of international capital. Bielschowsky, 2020 stated the following with reference to the state of higher education in Brazil.

“The expansion of higher education in Brazil has many merits, but its problems are not small; are especially large with regard to the private subsystem. The present study focuses on the behavior of this subsystem, giving indications that a special form of oligopoly was implemented, due to the high concentration of the “market” in a few business groups: in 2018, ten private business groups were responsible for around 50% enrollments and captured about 60% of new private sector inflows. This seems to be giving them the power to imply a behavior of obtaining high profitability and, in general, low quality of teaching. If the performance data is not yet sufficiently clear, there are clear indications of serious problems in the offer, which indicates low evaluation of students at Enade, high dropout rates and high student/teacher ratio, among other elements.”

Enade is an exam that is part of National Higher Education Assessment System and whose objective is to assess the quality of higher education courses. A selected sample of students from the first and last year of the courses participate. For the selected students who are finishing their college degrees, participation in *Enade* is a mandatory and indispensable condition for issuing school transcripts. Unselected students can also take the test as volunteers.

In 2019, 1,715,727 students enrolled in distance learning undergraduate courses were linked to only 8 business groups, a percentage of 70% of the total enrolled students. This concentration has reached paroxysms with a strong impact, as it threatens the diversity of the offer by imposing a fierce level of competitiveness, with sharp drops in the average ticket practised and the use of highly professionalised techniques for attracting students, which can make the sustainability of small companies unfeasible. The 10 largest undergraduate courses in terms of the number of enrollments in Brazil concentrate 49.6% of the total enrollment.

Considering the professions most directly related to competencies for the digital economy, only Civil Engineering (275,537 students or 3.4% of the total) and Information Systems (184,845 students or 2.1% of the total) are among the 10 most sought after courses. The high number of enrollments in courses with decreasing demand in the world of work can be seen by the fact that more than a third of the workers who have completed at least higher education perform functions that require a qualification lower than their education.

From 2012 to 2018, on an average, only 65% of those with higher education were allocated to jobs that require such qualification. Recently, however, this percentage has been reduced, thanks to the impacts of the strong economic crisis that generated a significant increase in the unemployment rate. That is, faced with a scenario of few opportunities, part of the more educated workers agreed to perform functions below their qualifications in order to avoid unemployment (IPEA, 2019).

The works that are predominantly composed of routine activities, whether manual or cognitive, are the first to be automated. Different technologies can increasingly serve as the substitutes and not just as a complement to workers who perform these tasks. This means the risk of a deepening of inequality and unemployment in Brazil. The presence of ICT in all types of organisations and enterprises, both in the area of services and in industries, calls for an emphasis on the development of so-called competencies for the digital economy.

Generic ICT skills are those needed in everyday work, school and life in general, such as accessing information online or using software. While *Complementary ICT skills* are those that change the way work is done and how people relate to each other, which requires the ability to process information, communicate with others, solve problems, plan and adjust quickly. On the other hand, *Specialised skills for ICT* involve the production of resources and services such as software, web pages, e-commerce, cloud storage and big data, with people capable of programming, developing applications and managing networks, for example.

In this sense, open and distance education can bring very promising new possibilities for Brazilian education. It is possible to take advantage of the possibilities of time, space and pace flexibility in the studies that EAD brings to allow the definition of personalised learning paths. The new pedagogical architecture would also have an impact on the organisational structure of the universities and on the performance model. It is possible to collaborate with the broader concept of technical and vocational education and training, which is considered an integral part of education and lifelong learning (continuing education) and refers to all forms of learning knowledge, skills and attitudes related to the world of work.

The assumption for the operationalisation of these possibilities, however, calls for a better articulation of the productive sector with educational institutions, public and private, as well as public policies capable of promoting this type of partnership around priority economic activities for the State.

In Brazil, open education initiatives are still incipient, based on an understanding that education can be improved, making educational assets visible and accessible, taking advantage of the collective wisdom of a community of practice and reflection. As stated by Sebriam et al. (2017): “Open Education is understood as a historical movement that today combines the tradition of sharing good ideas among educators with a digital culture based on collaboration and interactivity. It promotes the freedom to use, change, combine and redistribute educational resources, prioritizing open technologies. The concept also involves principles related to open pedagogical practices, with a focus on inclusion, accessibility, equity and ubiquity.”

As Iiyoshi and Kumar (2014) remind us, some practical synergy indicators need to be present to characterise a system in which open education materialises, namely:

- The partnership between institutions or systems to offer subscription-based education;
- Broader and more affordable access to textbooks and other educational materials;

- More flexible means of pursuing teaching and learning objectives;
- Productivity of educational organisations increases while redundant work is reduced and energy is shifted to more creative work with learning and teaching;
- Funding for innovation in education depends on the reuse of innovations in teaching, as well as in the field of research.

To the above are added the use of open educational technologies and open educational resources, both essential conditions within a new participatory culture to open up possibilities for new models of action, which are able to privilege inclusion, democratisation of access and the expansion of enrollments, ensuring good quality and meeting the socio-environmental and economic demands of society.

In Brazil, unless there is a complete reconfiguration of the higher education system now in force, it will be very difficult to see a short-term transformation that favours open education and better quality distance education, capable of taking the population to a new educational level.

CONCLUSION

The new competitive strategies of companies are based on technological innovations that modify employment levels and professional profiles in an intense and differentiated way. In addition to the traditional factors that impact employment levels, the diffusion of microelectronic-based technologies and new forms of work organisation have come to have very significant effects. Professional profiles are increasingly requiring skills that ensure full use of communication systems, data interpretation, flexible activities, integration with different occupational levels and generation, internalisation and exchange of knowledge. It is considered that the worker must increasingly, in this new context, be able to use his professional skills in an integrated way to his personal characteristics and socio-cultural experiences. Open education and distance education therefore should be seen as part of the necessary responses to support the

maximum inclusion of the Brazilian population in this new scenario in the world of work.

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Chapter 14

**OPEN HIGHER EDUCATION IN ASSAM:
PROSPECTS AND CHALLENGES**

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ABSTRACT

Open and Distance Learning (ODL) has received attention from the educational and other stakeholders like never before. In this chapter, an attempt is made to provide a short overview of the prospects and challenges of open higher education in an Indian state like Assam, which is geographically very remote, compared to many developed states of India. In order to do so, some important functional aspects of the ODL institutions of Assam namely—KKHSOU, GUIDOL, DODL, DU and CDOE, TU are taken into account. The findings of the study indicate that compared to the single mode or full-fledged open universities, the dual mode universities face more challenges. Another important finding is that even though the regulatory agency for ODL in India i.e., DEB, UGC has

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taken timely measures to ensure and maintain quality of the Indian ODL system as a whole, there emerges certain laps between the regulatory agency and the ODL institutions. This in a way defeats the very purpose of establishing an ODL institution in the country. The findings of this study will provide important insights to the stakeholders of open higher education to take up relevant steps with regard to the policy implementations of ODL in India as well as in a state like Assam.

Keywords: higher education, open and distance learning, open education, open university, dual mode university, quality assurance

INTRODUCTION

Education is the key to the all-round development of a country as it can transform the lives of the people; bring in meaningful changes in the society they live in and finally in the whole Nation. It is an important means of ensuring peace, removing poverty and driving the society towards sustainable development. In recent years, the Higher Education (HE) systems have changed drastically due to the invasion of Information and Communication Technology (ICT) and liberalisation of Education. Therefore, Open and Distance Learning (ODL) has emerged as one of the most rapidly growing fields in HE, which in most recent times, has witnessed certain paradigm shifts from the conventional on-campus education to off-campus ODL or online or digitalised education (Mahanta & Borkotokey, 2018). According to Sir John Daniel (2010), ODL should be seen as the key component in the educational planning in the underdeveloped countries. So, in a developing country like India, ODL can be seen as one of the most viable ways through which quality education can reach a large number of rural and remote populations. Of late, the Indian government released the Draft National Education Policy, which states that the quality of ODL programmes should be at par with the in-class or on-campus programmes available at the institutions with qualified faculty, quality programmes and courses and the best utilisation of the available resources (Draft National Education Policy, 2019).

It is against these changing and evolving contexts of higher education in a country like India, that a comparative study of the different ODL institutions across the state of Assam is undertaken so that it provides a clear picture of the issues, challenges and prospects of the ODL institutions in a North Eastern state like Assam. In this chapter, a brief review of the growth and development of open higher education in India, particularly in Assam, is also provided so that a conceptual understanding of the issues and prospects of the ODL systems in the region can be gained.

OBJECTIVES

The objectives of the chapter are:

1. To study the growth and development of ODL in India, particularly in Assam.
2. To study the important quality aspects of the ODL institutions functioning in Assam.
3. To study the issues and challenges faced by the ODL institutions of Assam and also to review their prospects.

METHODS

The nature of the data collected for this chapter requires the use of descriptive and comparative research methods. For the purpose of the chapter, we adopted the comparative research design as this type of study seeks to compare and contrast nations, cultures, societies, and institutions (Esser & Vliegenthart, 2017). Moreover, the adopted research design usually enhances the understanding of the issues and challenges as well as the prospects of any phenomenon using the empirical data collected according to the purpose of the study.

Sample

Two faculties, two officers and two office staff were selected from each of the ODL institutions through purposive sampling technique, which is a type of non-probability sampling that is most effective when one needs to study a certain aspect with experts within any organisation (Tongco, 2007). The participants are usually considerably experienced with the phenomenon being studied by the researcher (Mathew, I. R., & Iloanya, J.E., 2016). All the respondents were the employees of the ODL institutions selected for the study and thus, this sampling technique is best suited for the purpose of the study.

Tools

Semi-structured interview schedule was prepared for the faculties, officers and office staffs of Krishna Kanta Handiqui State Open University, Gauhati University Institute of Distance and Open Learning, Directorate of Open and Distance Learning, Dibrugarh University and Centre for Distance and Open Education, Tezpur University to collect various relevant information relating to the purpose of the study.

Procedure for Data Collection

Both primary and secondary sources were used to get the necessary information. Firstly, the institutional websites were reviewed. Secondly, the participants were interviewed through telephone/mobile phones. The participants also provided some data through e-mail in response to the queries put forward by the researcher. Thirdly, various policy documents of the Government of India and the websites of various government and non-government agencies or institutions namely—UGC, MHRD, IGNOU, Census of India, UNESCO, Higher Education of Assam, etc. were reviewed. All these data were then analysed qualitatively and

quantitatively according to the nature of the data. The combination of quantitative and qualitative approaches was seen as a better option for doing the research as they complemented each other and allowed complete analysis (Musingaf, M.C.C., Mapuranga, B., Chiwanza, K., & Zebron, S., 2015) of the issues found.

GROWTH AND DEVELOPMENT OF ODL IN INDIA

In the last four decades or so, India has witnessed an unprecedented growth in the ODL systems. In order to meet the increasing need and demand of the society for higher education, the Planning Commission in its third five-year plan (1961-66) recommended for the introduction of Correspondence Education at the university level. The Board suggested further studies in this regard and consequently, the Ministry of Education constituted a ten-member Commission to explore the matter under the chairmanship of Dr. D. S. Kothari. This Commission recommended for introducing Correspondence Courses at the university level, which would have equivalent status of conventional mode so that all the people can have access to higher education. Accordingly, the School of Correspondence Courses and Continuing Education was established by the University of Delhi in 1962 as a pilot project (Biswas & Gaba, 2002). This received a very good response from the intended learners.

After that, the Punjabi University, Patiala established a full-fledged Directorate of Correspondence Education in 1968. Following this trend, within a few years, Madurai Kamaraj University, Himachal Pradesh University, Bombay University, Punjab University, Jamia Milia Islamia University, Rajasthan University, Mysore University, Meerut University, Cochin University among others established correspondence courses. As the institutions received good responses from the potential learners, the UGC planned to strengthen the correspondence education at the university level. At the same time, the establishment of Open University in the UK (1969) drew the attention of the Indian policymakers who thought of initiating a similar Open University system in the country.

In 1970 (the International Education Year), the Ministry of Education and Social Welfare in collaboration with the Ministry of Information and Broadcasting, the UGC and the Indian National Commission for Cooperation with UNESCO, organised a seminar on the topic called “Open University.” The seminar recommended for the establishment of Open Universities in India on an experimental basis. Consequently, in 1982, the first Open University of India was established in the state of Andhra Pradesh and it was named Andhra Pradesh Open University. In 1992, it was renamed as Dr. B. R. Ambedkar Open University. The National Open University of India came into existence on September 20, 1985, which was later named as Indira Gandhi National Open University (IGNOU) after the name of the late Prime Minister, Mrs. Indira Gandhi. Adopting the same trend, Kota Open University (1987), Nalanda Open University (1987) and Yashwant Rao Chavan Maharashtra Open University (1989) were established as State Open Universities (SOUs) by the respective State Governments.

At present, India has total 15 universities, which run as single-mode Open Universities (OUs) offering programmes through the ODL mode. The Indian OUs are established either by an Act of the Parliament or of the State legislature. While IGNOU is the only Central Open University, the rest are State Open Universities. Compared to the OUs, Distance Education Institutions (DEIs) are part of the dual-mode universities that offer education through both regular and ODL modes. These DEIs can be part of Central Universities, State Universities, Deemed-to-be Universities, Institutions of National Importance, or any other institutions of higher learning recognised by the central/state governments. Thus, at present in India, there are two types of ODL institutions—Open Universities and Institutes or Directorates of Distance Education.

Before the establishment of IGNOU in 1985, the correspondence education programmes in the dual-mode universities were partly funded and quality assured by UGC (Panda & Garg, 2019). In the year 1990, the UGC and IGNOU agreed to establish the Distance Education Council (DEC) at the IGNOU campus and DEC was finally established in 1991 with a view to promoting the cause of distance learning, coordinating

among the Open Universities and other Distance Education systems and maintaining its standards. The DEC also provided financial support to the DEIs. The DEC started recognising the ODL programmes offered by the dual-mode public universities from the year 1995.

According to the directives issued by the Ministry of Human Resource Development, Department of Higher Education, Govt. of India, in December 2012, the regulatory functions concerning ODL programmes for higher education had been vested with the UGC. In, June 2013, UGC had taken over DEC by establishing Distance Education Bureau (DEB), which till today, governs the ODL programmes in India and has framed new Regulations for offering ODL and Online programmes (UGC, 2013; UGC, 2020) by the institutions of higher education. As part of the mandates, all ODL institutions will need to apply for recognition of their programmes from time to time and accordingly obtain the permission to run those programmes after due verification of the documents provided by the institutions by UGC. Thus, the DEB, UGC strictly monitors all activities by the ODL institutions across India to ensure quality. Most recently, the accreditation of the OUs by the National Assessment and Accreditation Council (NAAC), which is an autonomous institution of the UGC, has been made mandatory for each OU and the same is expected to enhance the different quality aspects of the OUs in the days to come.

GROWTH AND DEVELOPMENT OF ODL IN ASSAM

As per the 2011 census, the total population of Assam is 31,205,576 of which the number of male and female is 15,939,443 and 15,266,133 respectively. Moreover, the overall literacy rate of Assam is 72.19%, where the literacy rates of male and female are 77.85% and 66.27% respectively (Census of India, 2011). The literacy rate of Assam is slightly below the national average of 74.04%. The AISHE (2017-18), published by the Ministry of Human Resource Development, Govt. of India shows that the Gross Enrolment Ratio (GER) in Assam is 18.2% against the all India average of 25.8% (Census of India, 2011). These statistics show that

in case of both the literacy rate and GER, Assam is far behind the national average. To overcome these issues, extension and accessibility of higher education have become an emergent need and necessity.

If we look into the employment status of Assam, the number of unemployed in the State keeps on rising every day. According to the statistics made available by the State Skill, Employment and Entrepreneurship Department, the total number of registered unemployed in the State is 19,63,376, out of which 16,65,866 are educated or skilled and 2,97,510 are unskilled. Assam has 17 lakhs educated unemployed until July 2019. If we compare the unemployment rate of Assam with the National average, it is far ahead of the National average i.e., 8.1% against the National average of 6.1% (Government of India 2019; NITI Aayog, 2019). This is an alarming situation from the socio-economic point of view. Therefore, both the central and states governments of India must take this situation very seriously and deal with the issues by establishing educational institutes in order to offer courses and programmes that best suit the present national and global needs.

Against the contexts mentioned above, ODL is perceived to be the only way to bridge this gap. ODL in Assam was introduced with the establishment of one of the study centres of IGNOU in the campus of Gauhati University in the year 1996. At present, IGNOU has set up two Regional Centres in Assam, one in Guwahati and the other in Jorhat. 18 districts of Assam come within the jurisdiction of Guwahati Regional Centre and the other 13 districts come within the jurisdiction of the Jorhat Regional Centre. IGNOU has established study centres in several colleges and educational institutions of the region. Presently, IGNOU provides education to the unreached and needy learners of Assam through as many as 51 Study Centres (IGNOU, 2019).

In 1998, Gauhati University established its Post Graduate Correspondence School (PGCS), which was later renamed as the Gauhati University Institute of Distance and Open Learning (GUIDOL). GUIDOL strives to accommodate the students who cannot enrol in the conventional institutions due to various factors like the unavailability of seats in those institutions, livelihood compulsions on the part of the intending learners

and so on. Similarly, a Directorate of Distance Education was established in 2001 at Dibrugarh University, which was later renamed as Directorate of Open and Distance Learning, Dibrugarh University (DODL, DU) in 2017. DODL, DU was established with the vision to reach the unreached learners with a knack for higher education.

Krishna Kanta Handiqui State Open University (KKHSOU), the only SOU in the whole North East India, was established in the year 2006 at Guwahati through an Act of the Assam State Government. It is the first of its kind in the entire North East India and the 14th amongst the OUs in India. In a short span of 14 years, the university has been able to scale new heights by providing access to need-based higher education to large and diverse sections of the people which also include a very large number of women learners, learners belonging to SC, ST, OBC, learners residing in remote hilly terrains as well as learners hailing from riverine areas. Besides, the University has shouldered the responsibility of expanding its wings toward the diverse communities of learners by striving to be one of the best institutions of higher education of the country that would provide need-based and job-oriented education through the ODL mode with judicious use of the latest tools and technologies.

In the year 2011, the Directorate of Distance Education was established in Tezpur University (TU), which was subsequently renamed as the Centre for Open and Distance Learning, Tezpur University (CODL, TU). It was again re-christened as the Centre for Distance and Online Education (CDOE), as per the UGC (Open and Distance Learning Programmes and Online Programmes Regulations, 2020). The aim of CDOE, TU is to disseminate knowledge and impart quality education through the ODL mode.

Moreover, one Centre for Distance Education and Open Learning (CDEOL) was also opened in Assam University, Silchar in 2013, but not functioning at present. Some private universities and other state-level open universities also set up their study centres all over Assam to run different programmes through the ODL mode. However, due to the UGC, DEB Regulations, 2013, the institutions not within the territorial jurisdiction of the state of Assam needed to close their study centres in the region (UGC,

2013). However, the present study is delimited to 4 ODL institutions of Assam namely KKHSOU, GUIDOL, DODL, DU and CDOE, TU.

IMPORTANT FUNCTIONAL ASPECTS OF THE ODL INSTITUTIONS OF ASSAM

As today's ODL systems are supposed to meet the specific needs and aspirations of the learners, the QA mechanism must embrace contemporary measures like learner support services, extensive use of educational resources, use of ICTs and various other forms of media for curriculum transactions, quality enhancement of the curriculum and instructional materials and so on. The data collected as part of this study provided in-depth information about the ODL institutions of Assam. In the following subsections, we have provided a holistic review of all the functional aspects of all the four ODL institution of Assam selected for this study.

Vision and Mission

All the ODL institutions of Assam selected as part of this chapter came into existence to provide lifelong learning facilities to the needy learners of the region. For instance, KKHSOU was established to promote education to the unreached with the motto "Education Beyond Barriers" of age, academic and geographical locations. The University endeavours to provide higher education and training in various skills using the latest educational inputs and technologies.

Similarly, the vision of GUIDOL is to ensure the opportunity to pursue quality higher education to the large number of students who could not pursue higher education through the conventional mode of education. GUIDOL strives to accommodate the students who cannot enrol in the conventional system of higher education due to various factors like the limited number of seats in Post Graduate classes, livelihood compulsion,

etc. and aims to impart quality education in an intellectually challenging learning environment.

DODL, DU was established with the vision to reach the unreached. Considering the necessity of enabling the youths who are either employed or self-employed and who are unable to pursue higher education due to limited seats in HE institutions or due to economic or other reasons, the University has set the vision of taking Higher Education to the doorsteps of every learner. Similarly, the vision of CDOE, TU is to grow as a leading centre for human resource development through open, distance and universal learning systems. To achieve this vision, it aims to disseminate knowledge by imparting quality education through the ODL mode and by providing quality higher education at the doorstep of the needy learners through barrier less, flexible and open learning modes in conformity with the national agenda of educating the nation. The basic focus of the Centre is to prepare the human resources of the region and the country to face the challenges of livelihood by making them skilled and employable.

Organisational Structure

Organisational Structure means the planning or arrangement of an institution, which is used to facilitate information sharing and workflow generation at different levels within an organisation. It represents the hierarchy among the stakeholders within an organisation. The following Table 1 represents the organisational structure of ODL institutions of Assam selected for the study.

From Table 1, it can be inferred that the organisational structure of all the four institutions is almost at par with the norms for ODL (for both OUs and DEIs) laid down by the DEB, UGC. CDOE, TU has replaced the Advisory Council with CIQA (Centre for Internal Quality Assurance) after receiving UGC's instruction to establish a Centre for ensuring quality of the programmes offered through open mode through internal quality monitoring mechanism. All the other three institutions also have

established a CIQA for ensuring the quality of the programmes offered through internal quality monitoring mechanism.

Programmes on Offer

An ODL programme is the combination of various courses and/or learning components that lead to an academic degree. The programmes of the four ODL institutions of Assam are presented in Table 2.

As an OU, KKHSOU offers a variety of academic programmes to cater to the needs of the learners. The course structures of KKHSOU have been designed at par with the national curriculum frameworks. Along with the traditional programmes, the University also offers various professional certificate and diploma programmes to enable the learners who enrol in the study centres located in various colleges and educational institutions of the state to pursue add-on studies simultaneously with their regular courses.

Table 1. Organisational structure of ODL institutions of Assam

ODL Institutions	Organisational Structure
KKHSOU	Chancellor, Board of Management, Vice Chancellor, Academic Council, Other Statutory Bodies, adequate Academic and Administrative Staff
GUIDOL	Advisory Council, Director, adequate Academic, and Administrative Staff
DODL, DU	Board of Management, Director, adequate Academic, and Administrative Staff
CDOE, TU	Advisory Council, CIQA Director, adequate Academic and Administrative Staff

Table 2. Programmes of ODL institutions of Assam

ODL Institutions	Programmes	Total
KKHSOU	Ph. D, M. Phil, PG Degree (07), PG Diploma (07), UG Degree (15), Diploma (07), Certificate (08)	44
GUIDOL	PG Degree (10), PG Diploma (08), UG Degree (04)	22
DODL,DU	PG Degree (08), PG Diploma (3), UG Degree (08)	19
CDOE,TU	PG Degree (04), PG Diploma (04)	08

The GUIDOL offers a wide variety of programmes through a learning environment well equipped with the latest technologies. While, all the programmes of DODL, DU were previously offered under the annual mode except the post-graduate diploma in Computer Application. However, from the academic session 2020-2021, DODL, DU has restructured all its UG, PG and Diploma programmes and converted them to the Semester system according to the mandate of UGC.

The CDOE,TU also offers various post-graduate and undergraduate programmes in emerging areas of Science and Technology, Social sciences, Management and Humanities with a flexible system to cater to the needs of the learners who otherwise cannot avail the regular mode of education. The basic focus of the Centre is to prepare human resources of the region and the country by making them skilled and employable.

Educational Resources Development

Educational resources are crucial in any learning environment. Educational resources may be defined as the instruments, tools or ways by which one can achieve the learning objectives in an educational setting. They may be books, audio clippings, videos, games, news clippings or any other thing, which can help to go through any educational process. The following Table 3 shows the available educational resources in the ODL institutions selected for this study.

Table 3. Educational resources of ODL institutions of Assam

ODL Institutions	Educational Resources
KKHSOU	Printed and e-SLMs, Audio-Visual programmes/Lectures, Radio Counselling, YouTube Videos, etc.
GUIDOL	Printed and e-SLMs, Audio Lectures
DODL,DU	Printed and e-SLMs, Audio Lectures, Radio Counselling, Multimedia CD/DVDs for PG degree programmes
CDOE,TU	Printed and e-SLMs

KKHSOU provides Self-learning materials (SLMs) for each programme. All these SLMs are produced in-house and they are specially designed by teams of subject experts from within and outside the state. They are prepared in both English and Assamese medium, considering the need of the learners. A multimedia studio has also been set up to produce audio as well as audio-visual programmes, which serve as the complementary educational aids for the learners. The University regularly uploads educational videos in YouTube to be viewed by all. Likewise, the SLMs of GUIDOL are prepared by the subject experts from various institutions including the parent university. It sometimes takes help from some national publishing houses in preparing SLMs for a few programmes. It also provides audio supports in the form of Radio counselling to the learners. Limited e-content (e-SLM) can also be downloaded from the GUIDOL E-learning portal: www.bodhidroom.idolgu.org.

All the SLMs of DODL, DU are in house production. The directorate also organises some orientation/training programmes in its premises to orient the prospective course writers and editors about writing of units; editing of content, language and format; development of graphics, illustrations, etc. It also provides multimedia CD/DVDs and radio counselling in some programmes.

In CDOE, TU, SLMs are developed under a standard process as directed by UGC. The competent authority forms a Programme Advisory Committee which identifies appropriate authors and editors for the development of SLM for the programme. The authors submit the manuscript to the university and plagiarism check is also carried out. Then, they are forwarded to the editors for making requisite changes and corrections. After modification, the final version is again verified by CIQA. All the SLMs are then uploaded in the university website.

Learner Support Services (LSS)

In the ODL system, Learner Support plays an instrumental role in making two-way communications between the teachers and learners as

well as in facilitating the expansion of this system across the country. The term ‘Learner Support’ means the range of human, infrastructural and ICT based resources that guide and facilitate educational transactions. It complements and supplements the mass-produced Self-Learning Materials (SLMs). The initiatives taken by the ODL institutions of Assam as per the UGC Regulation on support services are provided in terms of the following:

- Pre-admission counselling
- Support for admission related matters
- Details of study material and information
- The delivery mechanism of study materials
- A full-time dedicated help desk
- Grievance Redressal Mechanism
- On-line guidance and counselling
- On-line discussion forum
- Learner Support Centres or Study Centres

All the four ODL institutions use a variety of modes to provide information to their prospective learners regarding the eligibility for admission, programmes on offer, duration of the programmes, fee structure, list of support centres and examination centres, etc. The most common modes are newspapers, respective institutional Websites, brochures and local television channels. Moreover, except CDOE, TU, the other three ODL institutions provide information through Radio Broadcast also. Admission-related matters are informed to the students mainly through websites, brochures, telephone and front desk facilities. All the institutions have a full-time help desk or information desk. They have the provision of delivery of study material by hand and also by post.

However, along with the above-mentioned means, they also upload the course materials as e-contents in their respective websites. All the institutions provide on-line guidance, counselling and discussion forum facilities to the learners through e-mails, social media platforms like Facebook and institutional websites. One distinguished feature of

KKHSOU and DODL, DU is that the faculty members create WhatsApp groups with each academic batch and all kinds of academic discussions are done through these groups. This can be considered a unique and innovative practice.

Moreover, the Regional Centres (RC) as well as the Study Centres (SCs) are also considered very important support services of the ODL system. KKHSOU has one RC in Jorhat district, which is situated in the middle part of Assam. All other ODL institutions, except CDOE, TU have sufficient number of Study Centres within their geographical jurisdiction.

Use of ICT

ICT refers to the use of various technological tools to make the teaching learning transaction faster, more widespread and accessible. The use of audio and video broadcast and media, communication with the learners with e-contents like texts, pictures, audio or video clips, controlling and monitoring of all these through the network-based management system—all are clubbed under the blanket term called ICT. In the recent years, the communication abilities among the people have increased manifold with the use of WhatsApp or other messenger App, voice chat, teleconferencing, video-conferencing and so on. Social networking sites like Facebook, Twitter, Instagram have enabled the learners to remain in contact with their teachers and communicate regularly with them.

The most frequently used ICTs in the selected ODL institutions are audio/videotapes, cassettes, CDs, multimedia arrangements, slide presentations, CD-ROM, online contents, etc. (Mahanta, 2013). This also means that ICTs provide both academic and non-academic support to the learners in pursuing a programme through the ODL mode. Effective distance education requires a sound adaption, combination and organisation of various ICT-based tools besides the printed SLMs. The various ICT-based support provided by the select ODL institutions of Assam are given in the Table 4.

Table 4. ICT based support in the ODL institutions of Assam

KKHSOU	IDOL, GU	DODL, DU	CDOE, TU
Website	Website	Website	Website
Toll-Free Telephone Facility	Several Telephone Lines	Personal Mobile phones of the Officials and Programme Coordinators	Single Telephone
Radio Broadcast Programme- "Ekalabya"	Community Radio – "Radio Luit" only for a 10 km radius	Computer-Lab with internet facility	E-Mail
Bulk SMS	Bulk SMS & Short code service	Bulk SMS	Bulk SMS
Community Radio- "Jnan Taranga"	Radio Counselling	Radio Broadcast Programme- "Gyanmalinee"	
Audio and Audio-Visual Programmes.	Provision for Updating Learners Profile on-line	Community Radio	
Smart KKHOU Internet Radio	E-portal	Multi-media CDs/DVDs	
An Open Access Journals Search Engine (OAJSE)	Toll-Free IVR System	What's app group	
Learners Social Network Site	IDOL FOSS Digital Classroom	Virtual Classroom	
Special Phone in Programme	Campus Placement	E-content lab	
KKHSOU Mobile App			

Quality Assurance through CIQA

Quality Assurance (QA) in higher education has gained serious attention from the institutions, stakeholders and scholars since the 1990s (Belawati & Zuhairi, 2007). Harvey & Green (1993) defined QA as an integrative process that includes a variety of individuals considering the multiple interrelated facts of the institution. Providing quality higher education to a large number of students at the minimum cost is the greatest challenge faced by the higher education sector in India (NKC, 2009). Finally, the NKC suggested establishing an External Quality Assurance Cell to assess and evaluate the institutions at regular intervals to maintain quality. Recently, the UGC (2017) also instructed all the ODL institutions of the country to establish a Centre for Internal Quality Assurance (CIQA)

to monitor its quality and to take corrective measures to ensure the presence of the quality aspects in both service delivery and management of the institutions.

The role of CIQA is clearly outlined in all the four ODL institutions selected for the study. The main objective of CIQA is to review the relevance and standard of the programmes on offer and make necessary changes in the curriculum and contents of the programme from time to time. All the four ODL institutions make it a point to continuously monitor the effectiveness of their educational services through CIQA and other statutory bodies. For example, KKHSOU, under the guidance of the CIQA office, has undertaken plans regarding SLM Audit, developing the mechanism for collection of learner's feedbacks, organising interactive meetings with the study centres and stakeholders, regular conduct of capacity-building workshops for the faculty and other staff. Moreover, it fixes the following strategies for the overall implementation of its mission and vision

- To embrace the philosophy of lifelong learning and strengthen outreach function
- To open up education for the unreached or left out.
- To inspire and mobilise the staff to contribute to the development of the institution.
- To initiate capacity building of the staff regarding the curriculum, effective learner support, assessment techniques and the adoption and adaptation of OER and MOOCs.
- To provide need-based courses which may open up opportunities for livelihoods.

DODL, DU has also given top priority to the development of need based academic programmes along with the development of course materials. This process passes through three stages namely—Programme Formulation, Instructional Design and Material Development. The Executive Council (EC) of Dibrugarh University has approved the Board of Management (BoM) of the Directorate for formulating and

administering the policy decisions relating to all DE programmes of the University. In connection to this, the academic matters are sent to the Board of Studies, UG Board, PG Board, etc. through the Joint Registrar (Academic); financial matters to the Finance Committee through the Deputy Registrar (Finance and Accounts); Administrative matters to the Registrar through the Assistant Registrar (Admin.) or/and Joint Registrar (Admin.) and examination related matters directly to the Controller of Examinations through the Joint Controller of Examinations.

In 2020, the CIQA cell of DODL, DU has undertaken the following tasks to be accomplished within 2021.

- To review the academic and administrative aspects from time to time.
- To identify the gaps and drawbacks of DODL, DU in comparison to the international standard of ODL and accordingly to overcome them.
- To introduce online courses/programmes according to the Regulations provided by UGC, DEB (2020).

CDOE, TU has also taken care to ensure quality from the initial stage i.e., from the planning of academic programmes, developing curricula and learning materials to the evaluation process. Time to Time, review is carried out by CIQA. Evaluation is done centrally in the office of the CDOE, TU only through its internal faculty members. Scrutiny of all results is conducted by a designated committee for each programme to avoid any errors, after completion of the evaluation. Results are put up through the examination committee who after conducting necessary checks, approve the results. Results are displayed on the CDOE webpage and are intimated to the learners through mail and bulk sms service.

DISCUSSION

After reviewing the data collected through interviews, it is inferred that the ODL institutions of Assam are confronting several issues and challenges to grow along with the face-to-face mode of education. The fact is that the ODL system has tremendous potential in changing the educational landscape of the state of Assam because of its distinctive nature of being a user-friendly and flexible system. It offers courses according to the need of the learners; for example, the employed can update their knowledge, the women homemakers can get a degree and lead a meaningful life, those who are unable to get admission due to less marks can achieve their desire for higher studies and so on. However, to achieve these goals, creating awareness among the masses is necessary.

The following are some of the ways through which ODL in a state like Assam can flourish in days to come.

- Learner Support Services (LSS) are the key to attracting learners to an ODL Institution. Mahanta & Hazarika (2013) found that as a single mode ODL institution, KKHSOU provides very strong support services compared to the dual mode ODL institutions of Assam. In the dual mode institutions, the prime focus has been on the conventional mode and therefore, policies mostly relevant to the conventional mode are often sought to be implemented for the open mode in these institutions.
- To attract more learners and expand the prospects of education, ICT-enabled technology in the teaching-learning process should be implemented in a large scale. It is observed that the stakeholders of ODL, from learners to counsellors or from faculties to administrators, are not so techno-friendly. However, the COVID-19 Pandemic has taught them to accept alternative modes of teaching learning through different tools and platforms, as no teaching-learning process is absolute. Therefore, the teachers will need to adapt to the changing educational environment for making the ODL system to flourish.

- It is observed that only KKHSOU offers a few vocational and technical programmes. The other ODL institutions should also offer such programmes collaborating with the neighbouring industries as a part of the Industry-Academia interface, which will ensure the employability of the learners.
- The ODL system is cost-effective. However, it can also contribute to sustainable development through the learning processes that transcend distance, gender, regional, cultural and socio-economic barriers (Singh & Paliwal, 2012). A uniform course curriculum with the conventional national system, adequate and quality infrastructures-human and non-human, a strong LSS with the optimum use of ICT, a transparent evaluation process, etc. are key to the growth and development of an ODL institution. Moreover, a positive mind set of all the stakeholders and the society is one of the most important attributes for the proper growth of the system. This is required since most of the people, even the academic counsellors, have negative attitude towards this system (Mahanta, 2014).
- No single ODL institution is offering online courses/programmes or has adopted any strategy of transferring credits with the national online platform like SWAYAM. Therefore, steps are to be taken by the institutions in this direction. KKHSOU is the only institution, which currently offers a Certificate Course in Japanese Language and Culture (CJLC) fully online.
- The way UGC has emphasised research in conventional education is rarely to be seen in the ODL mode. Especially, the research component is very less in the ODL institutions of Assam as most of the faculty members are on contractual basis and therefore, they are not eligible to apply for research grants. However, of late there can be seen a renewed thrust on both disciplinary and systemic research in the ODL institutions across India and one should grab these opportunities.
- The Draft National Educational Policy (NEP), 2020 has emphasised the presence of modular courses where a learner may

achieve a certificate or degree after completion of 3 to 6 months of a programme, or a PG diploma after the completion of one year of the programme and so. The ODL institutions across Assam should also keep this provision while planning and implementing a new programme (Mahanta, 2014).

- Quality Assurance (QA) in the ODL institutions has received a renewed focus, as they are required to reconcile with the new challenges. QA in any academic institution embraces all the different stages of an activity like planning, execution and implementation. Hence, QA measures can greatly enhance the quality and standard of any institution. It is not the destination, but a continuous journey to improve and exhibit excellence (Mishra, 2007). Therefore, it is important to carry out self-evaluative and reflective exercises for continuous improvement through the monitoring mechanism of CIQA in all the institutions selected for study.
- It is observed that the UGC, DEB has failed to properly communicate with the concerned institutions with regard to the recognition of their courses and programmes in a timely manner. This is a hindrance to the admission processes in all the institutions. Such steps taken by the UGC, DEB de-motivate the prospective learners who might like to take up a course through the ODL mode in any of these institutions.
- Most of the distance learners are not fully focused on their carrier prospects. Rather, they are engaged in multiple activities simultaneously (Mahanta, 2014). Therefore, once they find some barriers on their way, they lose interest simply because they lack the ability to overcome such resistance and continue their education. This creates externalities to the society as well. Further, such phenomenon defeats the very motto of establishing an ODL institution. This very issue has been crippling the Indian ODL systems with serious consequences.

CONCLUSION

There is no doubt about the fact that ODL is the only answer to cradle the overwhelming demand of Higher Education, especially in a developing country like India. Therefore, the ODL institutions will have to shoulder greater responsibilities to meet the emerging demands of educating all the aspiring learners. For this, the ODL institutions, mostly the open universities, should focus more on the services they provide rather than ending up being just profit-making institutions or degree providing institutions. Quality educational resources, need-based courses, enriched support services, user-friendly ICT tools and finally a proper quality assurance mechanism—all these should be considered very seriously by the policy makers and stakeholders of the ODL institutions. However, the DEB, UGC also needs to be prompt enough in communicating with the ODL institutions across the nation. Rather than playing the role of a Big Brother, the UGC should play the role of a facilitator following which these institutions find a better space to operate and play an important role in the nation building process.

The quality in open higher education in India in general and Assam in particular can be enhanced only when the challenges faced by the ODL institutions are systematically met or the institutions concerned undertake proactive measures to face those challenges. In the post-Covid situations, the ODL institutions of Assam will have to shoulder bigger responsibilities by offering education fully online or through the blended modes so that each learner can reap the benefits of education in real time. To that extent, due to the inherent flexibility in the preparation, implementation and delivery of need-based courses and programmes, these institutions should extensively offer learner-centred academic environment and provide support to the academic staff who, due to their capability to use various online tools, can certainly emerge as better digital academics compared to many of their counterparts in the conventional educational institutions of the state.

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