ASIAN ASSOCIATION
OF OPEN UNIVERSITIES

OPEN AND DISTANCE EDUCATION IN ASIA

GOOD PRACTICES FROM AAOU MEMBERS

Editor:
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Authors
KNOU
Dr. Ko Songhwan
OUM
Assoc. Prof. Dr. Ahmad Izanee Awang
Prof. Datuk. Dr. Mohd Tajudin Md Ninggal
Dr. Thirumeni T. Subramaniam
STOU
Assoc. Prof. dr. Taweewat Watthanakuljaroen
Prof. Dr. Sumalee Sungsri
Asst. Prof. Dr. Darunee Jumpatong
Assoc. Prof. Dr. Thanathnuth Chatpakkarattana
Assoc. Prof. Dr. Kemmanat Mingsiritham
Dr. Patthanan Bootchuy
Dr. Phantipa Amornrit
Dr. Piyapot Tantaphalin
Assoc. Prof. Dr. Sungworn Ngudgratoke
OUC
Institute of Lifelong Education and
International Department (Team)
OUJ
Prof. Masaya Iwanaga
Prof. Tsuneo Yamada
OUSL
Prof. Samuel Anbahan Ariadurai, Ph.D.
UPOU
Melinda dela Peña Bandalaria, Ph.D.
UT
Rahmat Budiman, S.S., M.Hum., Ph.D.
Dr. Ir. Durri Andriani, M.Ed.
Adhi Susilo, S.Pt., M.Biotech.St., Ph.D.
Dr. Lidwina Sri Ardiasih, S.Pd., M.Ed.
Made Yudhi Setiani, S.Ip., M.Si., Ph.D.
Dr. Mery Noviyanti, S.Si., M.Pd.
Olivia Idrus, S.E., M.Sc.
Dr. Ernik Yuliana, S.Pi., M.T.

Contributors
Dr. Mohamad Yunus, S.S., M.A.
Prof. Dr. R. Benny Agus Pribadi, M.A.
Erika Pradana Putri, S.T., M.Sc.
Dr. Heriani, S.IP., M.A.
Fawzi R. Zuhairi, S.Si., M.Sc.
Hilma Erfiani Baroroh, Lc., M.Hum.

Editor
Prof. Ir. Tian Belawati, M.Ed., Ph.D.

Design Director
Center for Multimedia Production UT

Cover Designer
Faisal Zamil, S.Des.

Illustration
Sunarti, S.Des.
Daniel Aditya Nofaldo, S.Ds.

Layouter
Bangun Asmo Darmanto, S.Des.

Publisher
Universitas Terbuka
Jalan Cabe Raya, Pondok Cabe, Pamulang,
Tangerang Selatan - 15437, Banten - Indonesia
Phone.: (+62 21) 7490941 (*hunting*),
Fax.: (+62 21) 7490147
Website: www.ut.ac.id/en

ISBN: 978-623-480-779-0 e-ISBN: 978-623-480-821-6

First Edition
First Printing, October 2022

Universitas Terbuka: Catalogue In Issue (RDA Version)

Name: Ko Songhwan
Title: OPEN AND DISTANCE EDUCATION IN ASIA (BNBB) / authors, Dr. Ko Songhwan, Assoc. Prof. Dr. Ahmad Izanee Awang, Prof. Datuk. Dr. Mohd Tajudin Md Ninggal, Dr. Thirumeni T. Subramaniam, Assoc. Prof. dr. Taweewat Watthanakuljaroen, Prof. Dr. Sumalee Sungsri, Asst. Prof. Dr. Darunee Jumpatong, Assoc. Prof. Dr. Thanathnuth Chatpakkarattana, Assoc. Prof. Dr. Kemmanat Mingsiritham, Dr. Patthanan Bootchuy, Dr. Phantipa Amornrit, Dr. Piyapot Tantaphalin, Assoc. Prof. Dr. Sungworn Ngudgratoke, Institute of Lifelong Education and International Department (Team), Prof. Masaya Iwanaga, Prof. Tsuneo Yamada, Prof. Samuel Anbahan Ariadurai, Ph.D., Melinda dela Pena Bandalaria, Ph.D., Rahmat Budiman, S.S., M.Hum., Ph.D., Dr. Ir. Durri Andriani, M.Ed., Adhi Susilo, S.Pt., M.Biotech.St., Ph.D., Dr. Lidwina Sri Ardiasih, S.Pd., M.Ed., Made Yudhi Setiani, S.Ip., M.Si., Ph.D., Dr. Mery Noviyanti, S.Si., M.Pd., Olivia Idrus, S.E., M.Sc., Dr. Ernik Yuliana, S.Pi., M.T. ; contributor, Dr. Mohamad Yunus, S.S., M.A., Prof. Dr. R. Benny Agus Pribadi, M.A., Erika Pradana Putri, S.T., M.Sc., Dr. Heriani, S.IP., M.A., Fawzi R. Zuhairi, S.Si., M.Sc., Hilma Erfiani Baroroh, Lc., M.Hum. ; editor, Prof. Ir. Tian Belawati, M.Ed., Ph.D. ; cover designer, Faisal Zamil, S.Des. ; illustration, Sunarti, S.Des., Daniel Aditya Nofaldo, S.Ds. ; layouter, Bangun Asmo Darmanto, S.Des.

Edition: 1 | Print: 1
Description: Tangerang Selatan: Universitas Terbuka, 2022 | 209 pages ; 27 cm (including the references)

ISBN: 978-623-480-779-0 e-ISBN: 978-623-480-821-6

Subject: 1. Pembelajaran Terbuka
2. Pendidikan Jarak Jauh
3. Open Learning
4. Distance Education

Classification Number: 378.175 [23] 202200521
Printed by

Catalogue in Publication

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President of AAOU 2020-2022

Rector of Universitas Terbuka
Prof. Ojat Darojat, M.Bus., Ph.D.

The idea of writing this book was first initiated by Prof. M. Atwi Suparman in 2018, the former of UT Rector and AAOU President. Up to the present, a comprehensive book discussing and highlighting distance higher education in Asia has not been published yet. In contrast, books on distance education or distance learning in other parts of the world have been published. Publishing a book on distance education in Asia then became a necessity. This idea was then presented in the OU5 Researchers forum in Da Nang, Vietnam and received a good response

This book of open and distance education in Asia is an important contribution from AAOU members and is dedicated to the global ODE field. It will be continued in subsequent series and is expected to enrich references to ODE practices.

from representatives of OUT Researchers, namely Universitas Terbuka (UT), HOU (Hanoi Open University), University of the Philippines Open University (UPOU), Sukhothai Thammathirat Open University (STOU), and Open University Malaysia (OUM).

Subsequently, in 2019 at the OU5 President Meeting in Surabaya, which was attended by UT, UPOU, WOU (Wawasan Open University), and AIOU (Allama Iqbal Open University) the outline of the book was approved. This book was expected to contain a portrait of the development of distance higher education in each country, including the foundational philosophy of its establishment and the development of its technology utilization. The AAOU Secretariat sent invitations to all AAOU members. There are 8 institutions that responded to be involved in writing this book, i.e. Korea National Open University (KNOU), Open University Malaysia (OUM), Sukhothai Thammathirat Open University (STOU), Open University of China (OUC), Open University of Japan (OUJ), Open University of Sri Lanka (OUSL), University of the Philippines Open University (UPOU) and Universitas Terbuka (UT).

It has been a long journey. Therefore, I would like to express my gratitude and appreciation to all the authors for their hard work and those who have supported in making this book possible. I would also like to thank all those who have provided valuable input in the process of preparing this book. Finally, I hope this book can be a keyhole for anyone who wants to know about distance higher education in Asia as it contains a comprehensive explanation of the development of distance higher education in respective AAOU member country.

October, 2022
President of AAOU
Rector of Universitas Terbuka,

Prof. Ojat Darojat, M.Bus., Ph.D.

INTRODUCTION

Prof. Tian Belawati, M.Ed., Ph.D.

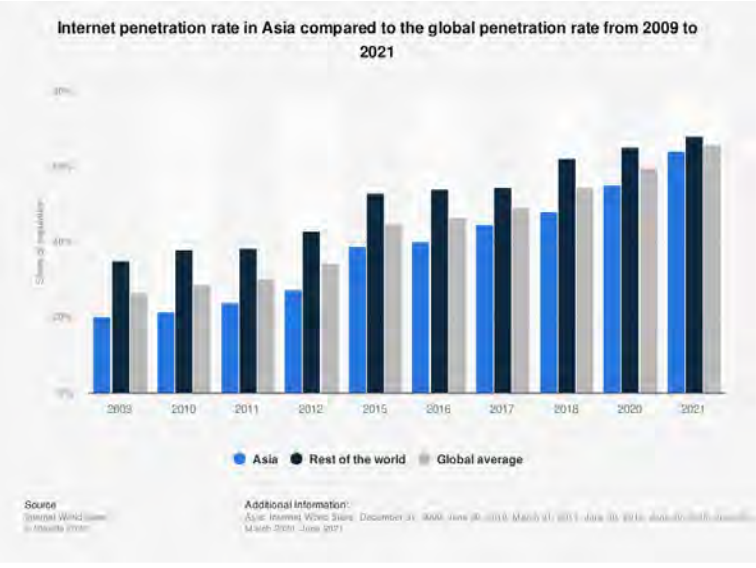
CONTEXTUAL BACKGROUND

Asia accounts for 54.9% of the global population and is the largest continent, with a total population of over 4.3 billion (Internet World Stat, 2022). The Asian Community has long placed a high value on education, and education is seen as the catalyst for social welfare, upward social mobility, and overall human well-being (Marginson, 2017). For most Asian countries, the lack of access to an education system makes it difficult to develop their people resources due to their large populations. The job landscapes have also changed as a result of the Industrial Revolution 4.0's key innovations. As a result,

the current human capital force needs constant up- and re-skilling. Countries must work to develop an educational system that will increase their capacity to expand access to education while simultaneously improving the standard for instruction. Since facts and literature demonstrate that distance education (DE) has been shown beneficial to increase access to and equity in education, particularly at the higher education level, many nations have adopted the DE system and method. Asia thus emerges as one of DE's major beneficiaries and players. The benefit of DE for Asian people can be represented by the enormous number of student enrolment. In India and China alone, over 10 million students are enjoying higher education through DE (Qayyum & Zawacki-Richter, 2019)

Even though the majority of DE programs in universities across Asia were developed before the advent of the internet and thus relied on the use of printed and multimedia learning materials, broadcast radio, and television, in addition to in-person tutorial sessions; the current DE were starting to be dominated by online learning mode, which has generated a sizable online learning market on a regional level. According to Allied Market Research, e-learning (which is another term used for online learning) market in Asia valued at $38,257 million in 2020 and is estimated to reach a value of $162,158 million by 2030 (Asia E-Learning Market Statistics 2030, 2022). Furthermore, the occurrence of COVID-19 Pandemic which limits people's physical mobility, has accentuated the need for online learning and the size of the Asia e-learning market in 2021 reached $43,790 million (Asia E-Learning Market Statistics 2030, 2022). The massive growth of online learning is both the cause and the effect of Internet penetration in Asia. InternetWorldStats estimates that Asia's Internet penetration increased by over 2,500 percent between 2000 and 2022. With a total of 2,772,013,116 internet users, the penetration rate in 2022 will be around 67 percent (InternetWorldStats, 2022). Figure 1 compares the growth of Internet penetration in Asia to that of the rest of the world from 2009 to 2021.

Figure 1
Growth of Internet Penetration 2009-2021



DISTANCE EDUCATION AND OPEN UNIVERSITIES IN ASIA

Distance education has a long history in Asia. Confucius, a Chinese philosopher, introduced the concept of education for all without discrimination more than 2,500 years ago and advocated that everybody who is ready to study should have access to educational opportunities (Song, 2022). Asia is also one of the first continents to widely adopt the principle of open education in order to increase access to higher education by creating open universities based on the United Kingdom Open University (UKOU) model (Belawati, Alfonso, & Saludadez, 2020). The Korea National Open University (KNOU), established in 1972, was the first open university in Asia. It was soon followed by Pakistan's Allama Iqbal Open University (AIOU), founded in 1973. Since that time, other additional open universities have risen up in various Asian nations, where they now dominate the region's DE market. These open universities (OUs) are single-mode institutions that only provide DE for their degree and continuing education programs. By 2011, there were around 70 open universities, at least 10 mega-universities (universities with student populations above 100,000), numerous traditional schools offering DE, and an increasing number of commercial and/or for-profit DE providers functioning throughout Asia (Jung, Wong, Li, Baigaltugs, & Belawati, 2011). The number has undoubtedly increased and currently, India alone has one national open university (The Indira Gandhi National Open University or IGNOU) along with 15 state open univerisities (https://www.eduvidya.com/Open-Universities-in-India); South Korea has no less than 17 cyber and digital universities which provide education completely online, in addition to the Korea National Open University (Lim, Lee, & Choi, 2019); China has 6 open universities (previously named Central Radio and Television and 5 provincial radio and television universities (RTVUs) and 39 remaining RTVUs that runs similarly to open universities (Zhang & Li, 2019); and Malaysia has at least two open universities and one cyber university. In addition to those institutions specifically focused on DE, an increasing number of campus-based universities are also providing DE programs, particularly in light of the COVID-19 pandemic's recent outbreak. As an example, the pandemic forced over 4000 higher education institutions in Indonesia that were entirely campus-based to shift their courses to online formats. Many of those institutions are predicted to continue offering DE even after the pandemic is ended.

The Asian community has long placed a high value on education and education is seen as the catalyst for social welfare, upward social mobility, and overall human well-being. Nowadays, Asia emerges as one of DE's major beneficiaries and players.

Although not all DE providers are open universities, but the role of OUs in Asia's DE is undeniable. OUs have provided access to higher education to millions of Asian people. The 47 full members of the Asian Association of Open Universities (AAOU) alone have more than 10 million students dispersed throughout more than 20 countries (AAOU Full Membership, 2022). The AAOU, established in 1987, is a non-profit association of institutions of higher education that focuses on open and distance learning. It aspires to enhance educational access for all people in Asia and elevate the standard for institutions in terms of management, instruction, and research related to education. It promotes the development of open and distance education opportunities, works with government agencies and others that are directly or indirectly engaged in DE, and supports collaboration with other similar regional and worldwide organizations (AAOU website, 2022). The members of AAOU are working together on a number of initiatives to increase the usage of DE and open education. Most importantly, by sharing their knowledge and experiences through AAOU, members are able to contribute to the Asia DE's steady transition to more contemporary DE methods.

Since improving educational access was one of the primary drivers behind the establishment of an open university, the majority of OUs in Asia follow the concept and principles of open education. They provide everyone access to their systems, irrespective of their age, place of residence, or level of income. It is clear that the vast majority of OUs encourage and enable lifelong learning through their policies and initiatives. Therefore, adult and working people frequently make up the majority of OU students. One extreme instance is the graduation of a student at the age of 93 from Universitas Terbuka (also known as UT, Indonesia Open University). However, the demographics of the student body have recently shifted, with a rise in the proportion and quantity of younger students (Kawachi, Sharma, & Mishra, 2006).

Prior to the advent of the internet, OU services were offered to students via pre-produced printed materials (supplemented with audio/video materials), in-person services including face-to-face tutorials, as well as pencil-and-paper tests. This is why the majority of OUs stand out by having a Head Office equipped with production and distribution facilities, which are uncommon for campus facilities in traditional institutions, as well as a network of regional offices or learning centers in the regions where they operate. As illustrations, the Indira Gandhi Open University (IGNOU) has 56 regional centers, 11 recognized regional centers, and almost 2,000 learner support centers across India[1]; the Bangladesh Open University (BOU) has 12 regional centers, 80 regional centers, and 1,550 study centers[2]; the Open University of China (OUC) has 45 provincial branches and 3,735 study centres[3]; and UT has 39 regional offices, 1 overseas student center, 70 learning centers, and around 1000 learning group points (which are independently formed and managed by students' study group)[4].

1. IGNOU's website at http://www.ignou.ac.in/ignou/aboutignou/regional/about
2. BOU's website at http://www.bouresult.info/php/rc-src.html
3. OUC website at http://en.ouchn.edu.cn/index.php/about-v2/brief-introduction1
4. Internal information from the office of Vice Rector for Institutional Development and Partnerships

The practice of DE in Asia is shifting more and more toward online education as a result of the accessibility of the Internet and the development of information and communication technology (ICT). Several DE universities in Asia are even founded directly as virtual or cyber universities. Nevertheless, to serve all types of students, most OUs continue to deploy more conventional DE based on the previous delivery model. The movement toward digital and online education can be observed from the vast research interest around the use of ICT for various aspects of the OUs' operations. Digital transformation among OUs can also be seen from the adoption of open educational practices such as Massive Open Online Courses (MOOCs) and Open Educational Resources (OERs). DE in Asia has evolved from being educational opportunities for people who otherwise would not have access to education into opportunities for lifelong learning for everyone using cutting-edge technologies.

PURPOSE OF THE BOOK

Since DE has a long history in Asia and is continuously evolving, creating a significant amount of human capital and economic growth, it is imperative to track this progress, particularly as it is practiced by open universities. As the largest OU association in Asia, AAOU, feels compelled to do this. The book would initially include chapters produced by each institutional full member of AAOU. However, due to time constraints, only eight chapters - written by the Korea National Open University (KNOU), Open University of China (OUC), Open University of Japan (OUJ), Open University Malaysia (OUM), Open University of Sri Lanka (OUSL), Sukhothai Thammathirat Open University (STOU) of Thailand, University of the Philippine Open University (UPOU), and Universitas Terbuka (UT) of Indonesia - are included in this book. Each chapter provides a thorough explanation of the origins, growth, and development of DE in the respective country as well as the evolution of the country's open university.

HIGHLIGHT OF THE CHAPTERS

Korea - KNOU

Korea National Open University has been serving as the dedicated DE university in Korea for over 50 years and have gone through several changes but continuously growing. Since 2000, KNOU has pursued educational reform based on openness, diversity, flexibility, and excellence. By giving everyone access to possibilities for higher education in new knowledge and technology, KNOU's educational mission is to cultivate talent that can adapt to a rapidly changing information-oriented society. KNOU students can attend online lectures through cable TV, the Internet, mobile devices, and offline classes based on study guides and course materials. The four categories that make up KNOU's online content are TV lectures, multimedia lectures, web-based tutorials, and audio lectures. As parts of government-initiated Korean MOOCS (K-MOOC), KNOU is supporting the idea of free public online education. KNOU also offers scholarships to a range of social groups and individuals to help them achieve their educational goals.

Malaysia - OUM

In Malaysia, DE started at the Centre of Distance Education known as *Pusat Pendidikan Jarak Jauh* (PJJ) at the Science University of Malaysia (*Universiti Sains Malaysia (USM)*) in the 1970s. Over 30 years later, Open University Malaysia (OUM) was established on 10th August 2000 as the country's 7th private university. Although today, almost all the public universities have a dedicated centre that promotes distance education, OUM as the pioneer ODL institutions in Malaysia aims to provide sustainable quality digital education that meets the national and global market needs. Under the new strategic planning, OUM has created plan focusing on four areas: (1) growth, (2) sustainability, (3) visibility, and (4) harmony. At present, OUM offers a total of 53 fully accredited programmes and 2 partial accredited programmes. There are eight (8) programmes at doctoral level, 21 programmes at master degree level, 1 post-graduate diploma programme, 17 bachelor degree programmes and only 6 diploma programmes. In order to remain in the frontier of global open education, the university collaborates and engages in collaborative research with other ODL players. Emphasis in research is also motivated by the need change and to exist in the frontier of open education and in the selected niche areas amidst global challenges. As other DE and ODL institution, OUM is also going through a digital transformation which is supported by the Strategic Roadmap that is developed to bring the university to greater heights and recognition within the next five years. In addition, OUM has plans to actively engage in social innovations and contribute to efforts for creating equal opportunities through education and particularly equity in education.

Thailand - STOU

The Foundation for DE by Satellite was founded in 1995 with the blessing of His Majesty King Bhumibol Adulyadej Maha Bhumibol Adulyadej (King Rama IX). STOU as the first OU in Thailand is designed to provide lifelong learning using DE system to respond to individual and societal needs. STOU's University Development Plan of 2018–2037 focuses on adjusting the university to cope with more challenging external contexts, to create the new and stronger identity of the university, to focus on provision of up-to-date lifelong education including formal education, non-formal education, and informal education, and to respond to the needs for learning and skills of the future world. Textbooks, workbooks, and study guides serve as the primary learning media, with additional multimedia programs serving as a supplement. However, STOU has recently introduced computer-based DE in addition to printed-based materials, including E-learning, M-learning, Video on Demand, Video Conferencing, Computer Conferencing, Computer-Based Instructions, Web-Based Instruction, and Face-to-Face Interaction. In order to increase learning options for students, STOU developed STOU-MOOC in collaboration with the Thai Cyber University (TCU) and the Office of the Higher Education Commission (OHEC). MOOCs are seen to be more suited to students' demands in the digital age.

China - OUC

China has a longstanding history of developing DE, which has allowed it to become the largest provider of DE in Asia, if not the entire world. Following the reform

and opening up, economic development was given priority, and the Chinese government made the decision to actively promote adult education through satellite radio and television. As a result of the development of radio and television universities (RTVUs), a nationwide distance education system made up of one central RTVU (CRTVU) and 35 provincial RTVUs had emerged in China by the year 1985. The CRTVU and five provincial RTVUs were transformed into open universities in October 2010, and by the end of 2021, all remaining 44 provincial RTVUs had also adopted the term "open universities." From a technological standpoint, the open and distance education system in China over time demonstrates how the creative use of technology has been crucial in modernizing the educational system. The learner-centered theory has also received increasing attention, and it has been reflected in numerous practical ways as the teaching system has grown. The global open movement has also received active support from China and OUC. The development of MOOCs in China over the past few years has been successful thanks to the collaboration of academic institutions, governments, and other organizations. According to figures from the Ministry of Education, more than 10 MOOC platforms have been built by the end of 2017 by domestic institutions of higher learning and allied organizations, 3,200 courses had been uploaded by around 460 institutes of higher learning, and 55 million college students and other learners from all walks of life had participated in the courses. By October 2021, up to 47,500 online courses had 364 million participants, and 290 million students had acquired MOOC credits.

Japan - OUJ

Prior until now, lifelong learning was thought to be the most distant aspect of Japanese higher education. The common perception of lifelong learning as a continuation of social schooling and "leisure learning" or "time killing" for persons with lots of free time could be one explanation for this. The deeper problem, however, is that the mechanisms in existence at higher education institutions were not designed to adequately meet the needs of lifelong learners. Instead, it was widely acknowledged that they were relatively closed systems for adult learners. Over the years, the higher education system in Japan has gone several changes and movement towards diversification of higher education institutions providing the opportunities for adult learners to use higher education for lifelong learning. Currently, there are more than ten types of post-secondary educational institutions that can be used as lifelong learning opportunities in Japan including university extension, correspondence education at universities and junior colleges, specialized training colleges and miscellaneous schools, private education and cultural businesses, and social correspondence education. The OUJ was developed in 2007 based on the previously DE institution called the University of the Air, which was founded back in 1983. The OUJ is legally classified as "Private University" that is funded by the Government's "Management Expenses Grant" and aims to be a lifelong learning institution providing a wide range of people with opportunities for obtaining higher education. In addition to its formal education programs, OUJ has also been active in developing and offering OERs and MOOCs in collaboration with Japan's MOOC (JMOOC).

Sri Lanka - OUSL

The first non-traditional higher education institution in Sri Lanka was founded in 1972 when the government of Sri Lanka established the External Services Agency (ESA) to register students for the university's external exams. The OUSL was ceremonially launched on June 19, 1980 but was legally instituted as a university on July 22, 1980. The mission

statement states that OUSL's goal is to achieve excellence in life-changing education by offering equitable learning opportunities through open, distance, and flexible education while maintaining a commitment to excellence in teaching and research. One of the OUSL's distinguishing features in comparison to other OUs is its provision of science-based degree programs, including an accredited engineering degree that is on par with those provided by Sri Lanka's traditional universities. As a DE university, the OUSL largely relies on printed and electronic lesson materials, enhanced using contemporary technologies. All of the university's courses are currently provided online in one of three formats: Supplementary, Blended, or Online-Plus. Each course will fall under one of the three classifications based on the quantity of online participation that is offered for that particular course. Additionally, the OUSL has been a leader in embracing new technologies and approaches, such as e-learning and teaching materials based on Open Education Resources (OER).

The Philippines - UPOU

Distance education in the Philippines was established through the initiatives of various individuals and organizations which shaped its development to its current status and articulations. Most of the literature published about DE in the Philippines would trace it back to radio through the following initiatives: the "farmers' school" in 1952, Pacifico Sudario in 1959; and the school format radio in 1963. Another important contribution to the establishment of the DE in the Philippines is the Science Teaching Using Distance Instruction (STUDI) in 1984 by the University of the Philippines Los Banos, which eventually led to the establishment of the University of the Philippines Open University (UPOU) in 1995. The Internet has played a significant role in the development and transformation of UPOU, especially since it enables the university to reach learners even beyond the geographical confines of the country. The online component was first formally incorporated into UPOU's instructional delivery system in 2001, primarily to replace face-to-face and teletutorial sessions and go

beyond serving as a simple communication tool for students. In 2007, the UPOU fully transitioned to the digital format, digitizing all of its contents and operations, particularly those that involved students. The discourse about openness and attempts to offer open online courses started at UPOU at about the same time as online learning in 2001. In 2013, the first MOOC was offered by UPOU under the partnership with one of the leading mobile service providers of the country, SMART Telecommunications. Since then, UPOU has created a variety of MOOC sets in partnership with other partners, including MOOCs on the Service Management Program (2014), MOOCs on Child Rights Protection and Promotion (2015), and MOOCs on teacher preparation for online teaching (2015). As part of its articulation of open education practices, UPOU also began publishing an open journal, the International Journal on Open and Distance eLearning (IJODeL), in 2015. In 2017, the UPOU began to offer MOOC Certification programs, which are actually 3 or 4 related MOOCs combined to deliver a specific set of knowledge and skills.

Indonesia - UT

The Education Radio Program and the teacher training program by correspondence were the first DE in Indonesia, which started in the 1950s. The type of correspondence course was replaced more than 30 years later in 1984 with the founding of UT. Before 2001, when all institutions of higher learning were allowed to provide distance learning courses, UT was the only university authorized by the government to offer higher education through this method. UT was established with two specific aims: to improve in-service teachers' qualifications and to increase Indonesian students' access to higher education. Therefore, it is not unexpected that the majority of UT students were initially working adults and practicing teachers. However, that has shifted over the last few years to favor younger adults in a variety of professions. The era of online learning system at UT started in 1997 when UT introduced online student support services through its website. At present, UT is in its initial stage of utilizing the latest technology such as augmented and virtual reality/extended reality for delivering the academic content. In addition, since 2014, UT has developed and made available OERs and MOOCs in order to deliver nationwide community services via online platforms. Through its most recent division, the Indonesia Cyber Education Institute (ICE-Institute), UT has established a collaboration with other higher education institutions in order to further promote the open education practice in Indonesia. This consortium is encouraged and supported by the Ministry of Education, Culture, Research, and Technology. Through ICE, UT reaffirms its dedication to provide open access, free university courses.

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Korea National Open University (KNOU)

01

01

ODE in Korea: Korea National Open University

Ko Songhwan

Korea National Open University

ESTABLISHMENT

Although higher education through distance learning has been developing in the West for over 100 years, it has only been developed in Korea over a short period of time. In 1972, Korea National Open University (KNOU) was first launched as the Department of Telecommunications affiliated with Seoul National University as a Type 2 college. Ten years later, KNOU was separated from Seoul National University and became a Type 5 college that runs an independent program.

KNOU is the first national open university in Korea. It was established by the Ministry of Education in 1972 as a solution for providing higher education and responding to great demand in society. Ever since, many other distance education institutions being founded and operated including the cyber universities. As of June 2020, there was a total of 21 cyber universities in Korea. The number of cyber universities has expanded including a total of 16 special cyber graduate schools that had been opened in nine other

KNOU has been contributing to the lifelong education system with its foundation philosophy to 'realizing a lifelong learning society by providing the opportunity of higher education through a distance learning'.

universities. In addition, a cyber university project, initiated by the Ministry of Education in 2018 as a means of "content development to increase student competencies over the lifecycle", was also expanded to a project aimed at fostering innovation in online university competencies in education in 2020. Currently, cyber universities focus on enhancing the distance education system to increase social capabilities of adult learners and to enhance industrial personnel's AI competencies in creative convergence.

As the first national open university in Korea, KNOU has been contributing to the lifelong education system with its foundation philosophy to 'realizing a lifelong learning society by providing the opportunity of higher education through a distance learning'. KNOU aims to: (1) provide opportunities for higher education, (2) improve education levels of Korean citizens, (3) develop and expand adult education, and (4) cultivate talent in many fields. To commemorate its 50th anniversary in 2022, KNOU has established the new vision which is to become "The Hub University of Knowledge Network that is Ushering in the Age of Wisdom".

The foundation of KNOU in 1972 was deemed to be an innovative event and an "academic revolution" that fundamentally transformed the preexisting college education's philosophy, system, and methods. The emergence of KNOU significantly changed the traditional concept of college students. Adult learners involved in both work(housework) and study started playing a leading role in college. As the open admission system applied with the document screening process, the door to college opened up for adults beyond college-age. KNOU established a foundation for lifelong education by extending the rights for learning over a lifetime and providing learning opportunities to people of all social classes.

PLANNING AND DEVELOPMENT

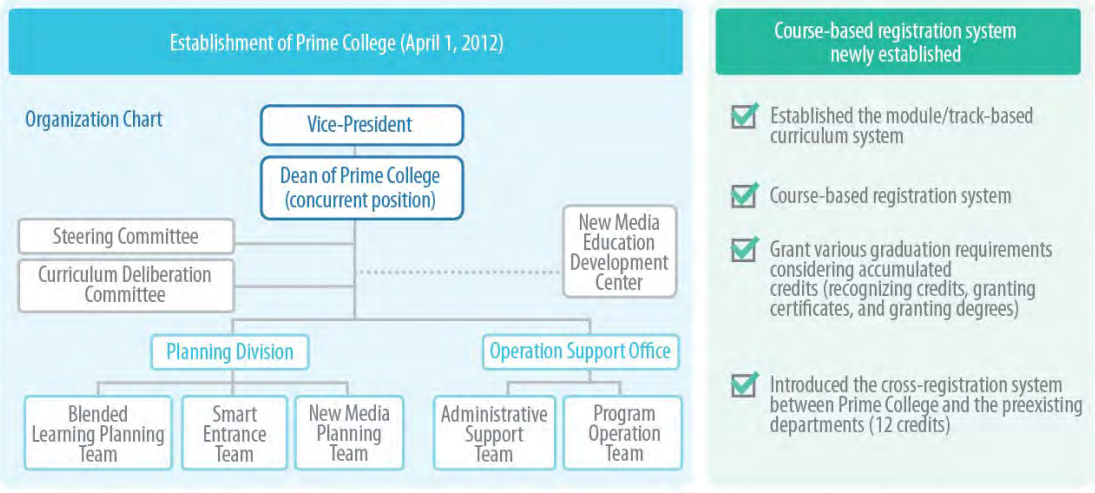
As the Lifelong Education Act was established in 2000, KNOU strengthened its status in the era of lifelong learning. Based on its philosophy of lifelong education, KNOU has proclaimed the basic direction of education through the 'Charter of Korea National Open University' (revised on May 31, 2001) based on the following philosophy:

> Lifelong intellectual development to all members of society, regardless of time and space, through advanced distance education.

Considering the basic direction of education, KNOU has been aiming for educational reform based on openness, diversity, flexibility, and excellence since 2000. The educational purpose of KNOU is "to foster talent who can adapt to a rapidly changing information-oriented society by providing opportunities for higher education of new knowledge and technology to all people."

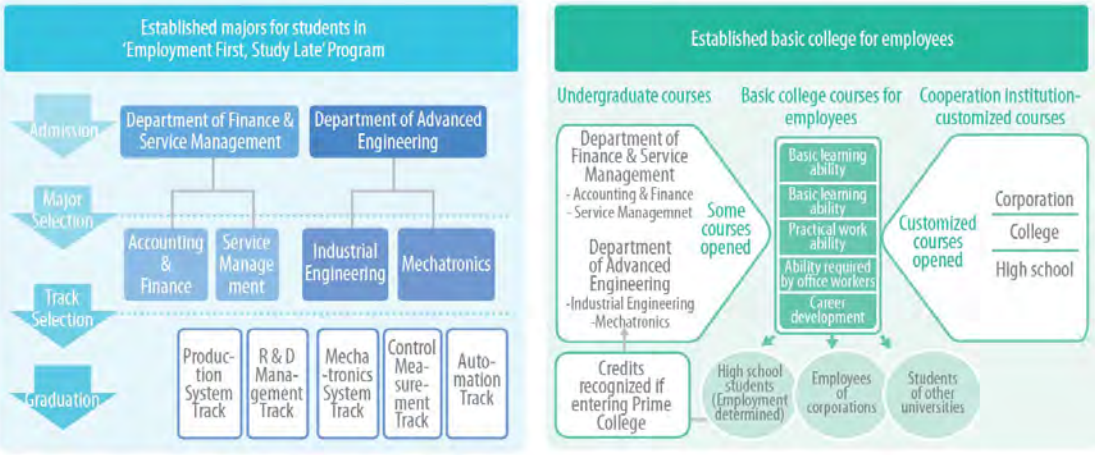
Following up the afore mentioned new direction, KNOU established new schools and colleges, as well as sets up new registration schemes and learning tracks. First, KNOU founded a graduate school for master's degrees in 2001 to provide opportunities for quality higher education. Although the enrollment quota of the graduate school was 200 in 2001, it increased to 3,500 as of 2015. Second, KNOU established Prime College in 2012 and introduced the course-based registration system in to provide a variety of learning media. With the revision of the school regulations in 2013, KNOU introduced the cross-registration system between Prime College and the preexisting departments.

Figure 1
Organization of Prime College and its Academic Affairs



Third, KNOU, as a hub of lifelong college learning, has been carrying out some government tasks relating to the Lifelong College Learning Promotion Projects emphasized by the '3rd Master Plan to Promote Lifelong Learning'(2013~2017). KNOU launched the 'Blended Learning Environment Development Project' in 2012 to support the baby boom generation in their later years and conducted the 'National Smart Entrance System Project; of the Ministry of Education in 2013.

Figure 2
Major Tracks and Programs for KNOU Students who are Working after High School Graduation



MANAGEMENT SYSTEM

There are three offices and one bureau at headquarters of KNOU: Office of Academic Affairs, Office of Student Affairs, Office of Planning Affairs, and Bureau of General Affairs as shown on the organizational chart (Figure 3). They control the entire system of KNOU.

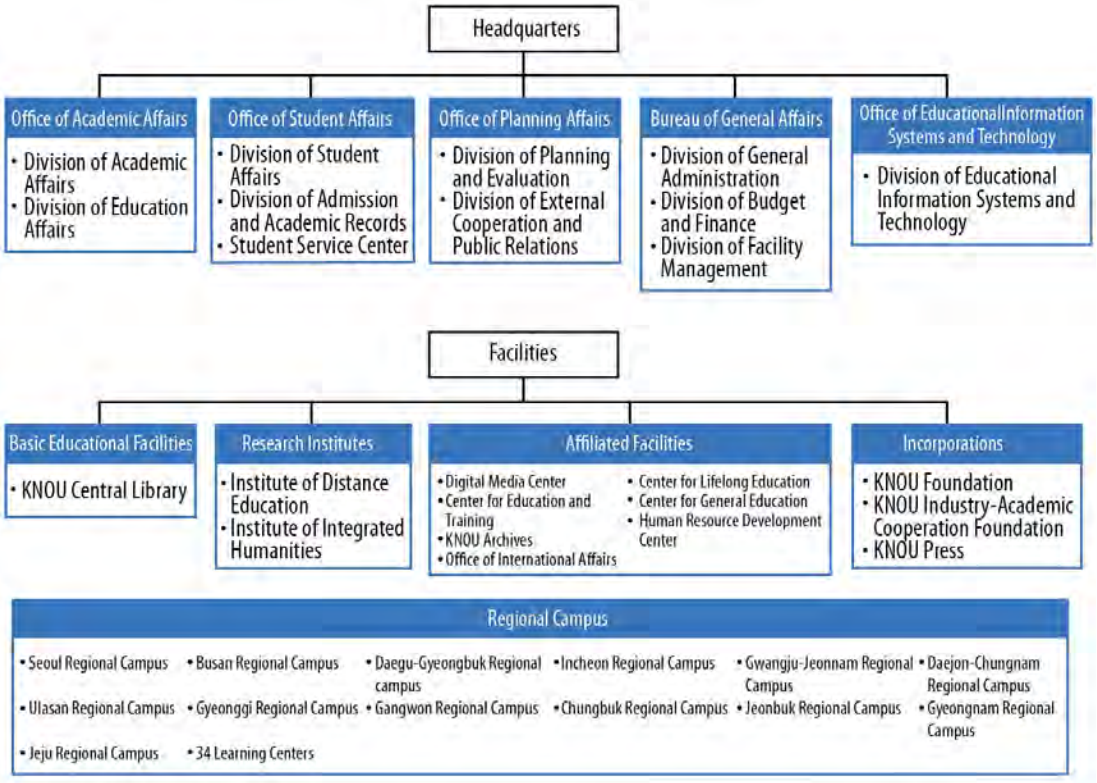
The Office of Academic Affairs consist of the Department of Academic Affairs and the Department of Education Affairs. The role of the Department of Academic Affairs is to manage human resources, establish departments and curricula, and publish teaching materials. The Department of Academic Affairs are divided into the Teaching Staff Management Team and the Academic Affairs Management Team. The Teaching Staff Management Team manages teaching staff, researchers, and their education, operates the Academic Affairs Committee, and issues certificates. The Academic Affairs Management Team establishes or abolishes departments, evaluates professors, provides teaching staff with overseas training, and holds a professors/deans meeting.

The Office of Student Affairs consists of the Class Management Team, the Course Management Team, and the Test Management Team. The Class Management Team manages broadcast lectures, offline courses, and teaching staff's career

development. The Course Management Team manages students' attendance, tutoring, seasonal class/test, and internet learning. Lastly, the Test Management Team evaluates lectures and manages graduation requirements and school records.

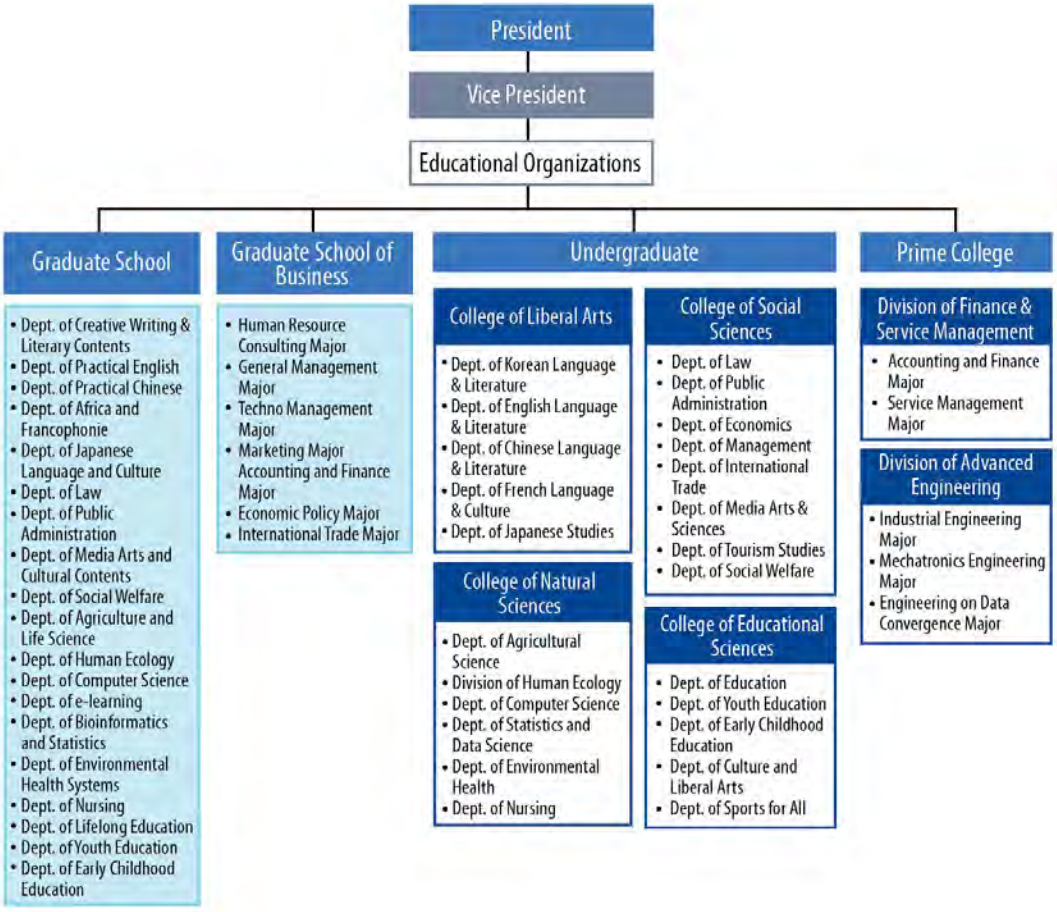
The Office of Planning Affairs consist of two departments: Department of Planning and Evaluation, Department of Public Relations. They are mainly setting the vision and making long-term goals of the university. This office issues report on 'University Development Strategy' annually.

Figure 3
KNOU's Organizational Structure



Academically, KNOU offer educational programs through several academic departments: Graduate Schools including Graduate School of Business, Undergraduate Colleges, and Primes College with two divisions (Figure 4). the Administrative Office of Graduate School is operating independently. The Administrative Office manages graduate students' school registration, academic records, dissertations, and graduation. The Prime College has the Degree Management Team under the Operation Support Office. The Degree Management Team manages admission and class registration, holds the curriculum deliberation committee meeting.

Figure 4
KNOU's Academic Programs



DELIVERY SYSTEM AND TECHNOLOGY USE

KNOU students take online lectures using cable TV, the Internet, and mobile devices and offline classes based on teaching materials and workbooks. In relation to teaching materials, KNOU has a Digital Media Center and a publisher called KNOU Press. The Digital Media Center produces and distributes distance education contents and the KNOU Press plans, publishes, and sells teaching materials. In addition to the production and distribution of teaching materials and supplementary materials, the KNOU Press, an independent corporation, publishes academic books and articles of KNOU professors as part of the KNOU Press Policy Project.

KNOU's online contents are divided into four types: TV lectures, multimedia lectures, web-based instructions and audio lectures.

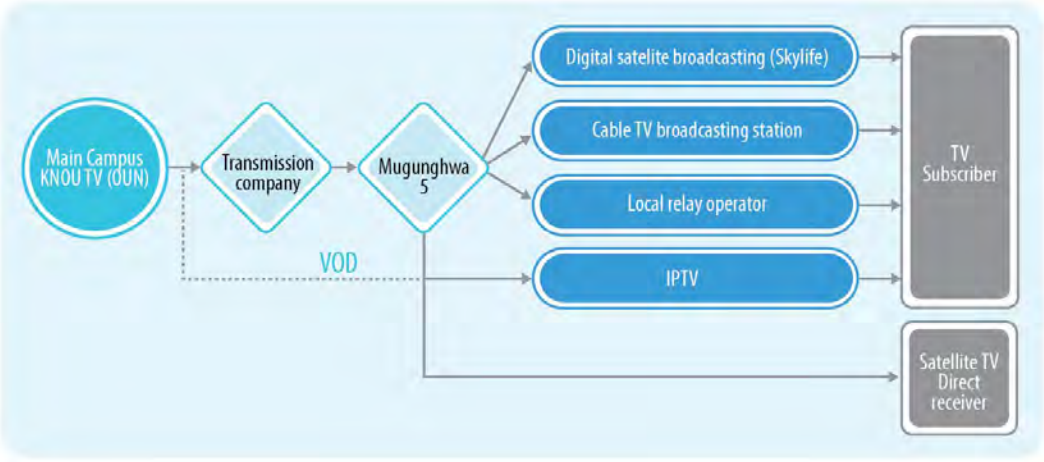
(1) TV lectures

TV lectures, one of the most accessible forms of media, are distributed via TV which is the main medium of distance

learning. TV lectures are the most common lecturing medium in the sense that anyone as well as KNOU students can easily access them. Since 1995, TV lectures have been transmitted via KNOU cable channel OUN. TV lectures are divided into undergraduate lectures and TV liberal arts lectures. Undergraduate lectures are provided so that students can understand educational contents in depth. In addition to professors' instructions, TV lectures include expert interviews, case studies, etc. Lecture contents are produced in various ways using multimedia materials. Through TV liberal arts lectures, students can understand higher education contents more deeply and easily. These lectures are produced as lectures, conversations, documentaries, etc.

Students can watch lectures via OUN of cable TV/satellite TV/IPTV and study anywhere, and at any time using the Internet LOD. In addition, they can connect to U-KNOU+ Mobile Service using their smartphones anywhere. OUN broadcasting scheme is as shown in Figure 5.

Figure 5
OUN Broadcasting



(2) Multimedia lectures

Multimedia lectures are a type of e-learning lectures that maximized learning effects using videos, texts, and various visual materials. Therefore, multimedia lectures are based on e-learning tools. Multimedia lectures are divided into Video+PPT(PowerPoint), Audio+PPT(PowerPoint), and Video. Video+PPT(PowerPoint) and Audio Lecture+PPT(PowerPoint) delivers lecture contents using e-blackboard.

Multimedia lectures consisting of Preparation, Lecture, Quiz, and Summary is designed so that students can study the subject in order. In addition, these lectures provide Expert

Interviews and Practice as advanced menus. Students can study the subject via the Internet LOD or connect U-KNOU+ Mobile Service using their smartphones anywhere and at any time.

(3) Web-based instructions

Web-based instructions (WBI) is a type of e-learning that facilitates various teaching-learning activities through two-way interactions between instructors and students based on the Internet. WBI is mainly developed for graduate courses. KNOU web-based instructions utilize a variety of multimedia materials such as video, audio, animation, etc. It facilitates team projects as well as online discussion and induces voluntary participation from students. The types of web-based instructions are as shown in Figure 6.

Figure 6
Types of Web-based Instructions

Category	Description
Tutorial type	A general of WBL. Students interact with learning materials without direct assistance of the instuctors.
Discussion-centered type	Students share their information, ideas, and opinions with other students or instructors to solve a problem.
Project type	Self-directed learning activities through projects.
Practice-centered type	It suggests practice tasks or processes and the instructor shows demonstration videos.

Web-based instructions are provided for a few undergraduate courses and all graduate courses. Video lectures and audio lectures are provided via the website. Students can participate in various activities through the message board. WBI facilitates interactions between the instructor and students. WBI also provides tutoring.

(4) Audio lectures

For students who could not access broadcast lectures, KNOU established the Audio Library so that they could borrow lecturing cassette tapes. Regional learning centers lent or sold audio/video recorders so that students who missed radio/TV lectures could record broadcast lectures which are also sent out by mail.

At present, instruction-centered classes such as languages are distributed as audio lectures. Audio lectures are distributed on the internet and students can download them as mp3 files using their mobile devices. Students can study audio lectures anywhere and at any time.

MOOCs AND OTHER OPEN EDUCATIONAL PRACTICES

K-MOOC

The Ministry of Education in Korea initiated K-MOOC (Korean Massive Open Online Course) in 2015 as a response to the international expansion of Massive Open Online Course (MOOC) and the changing paradigm of higher education. K-MOOC revolutionized the learning method of universities and suggested equal opportunity for higher education. This will contribute to improving the quality of higher education and ultimately enhancing the competitiveness of universities through the spread and dissemination of higher education.

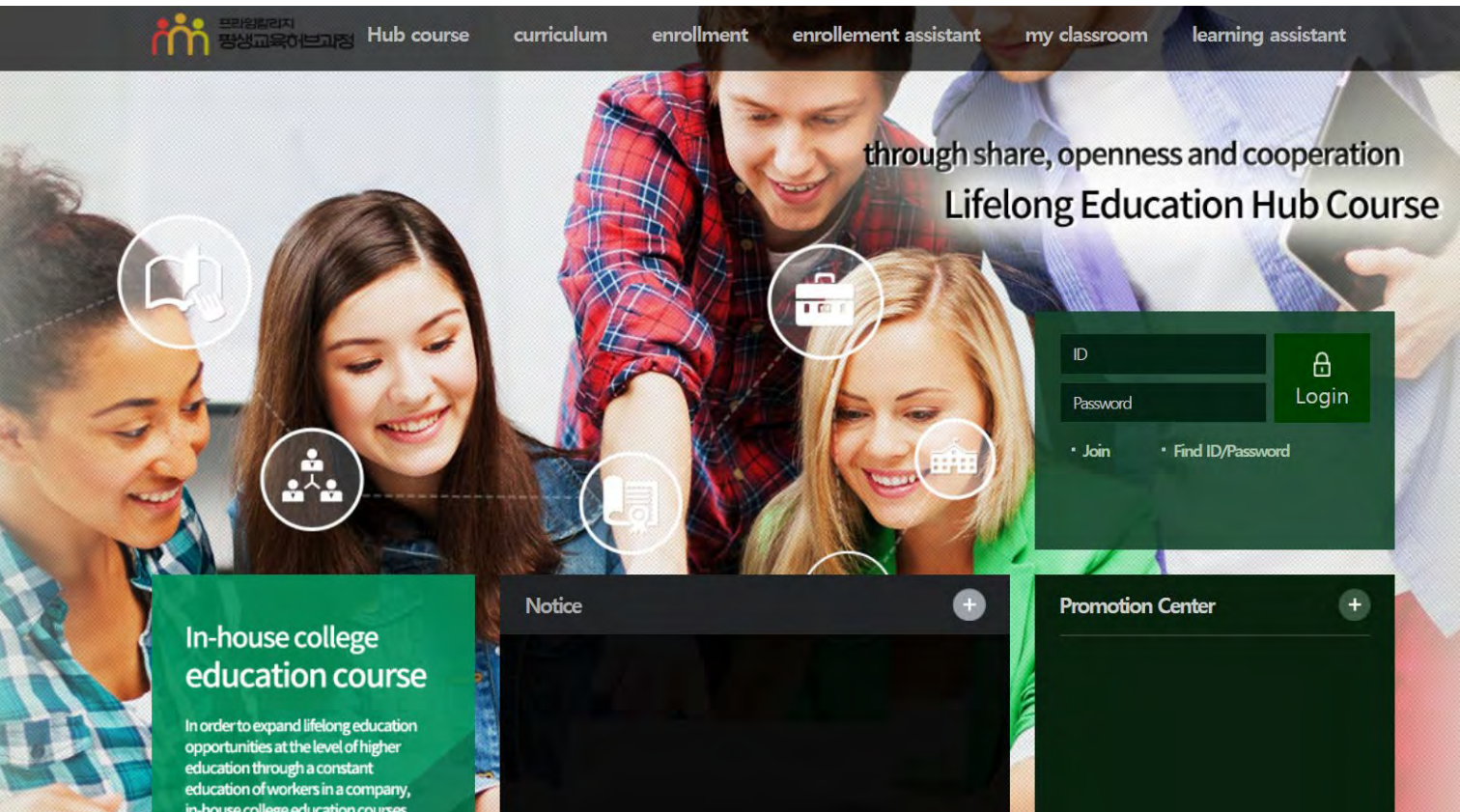
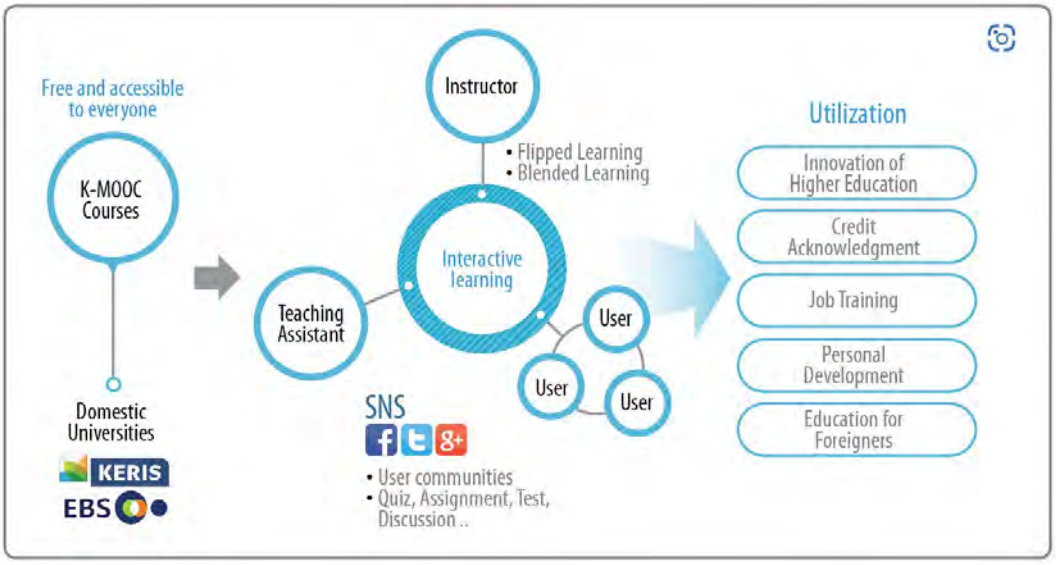


Figure 7
K-MOOC Platform



Top Korean universities such as Seoul National University, Yonsei University, and Korea University, were selected as the test bed for K-MOOC pilot operation in 2015. While the selection process of the content was centered on top universities until 2018, the Ministry and National Institute for Lifelong Education (NILE) changes the selection process to prioritize the course content. Specifically, they began to select a bundle of 4~5 courses to create a curriculum mostly related to the topic of the 4th Industrial Revolution. Each bundle is selected under topics that are policy driven while other individual courses can choose their topic autonomously.

After three years since its launch, the interests of individual learners have increased consistently, and it is expected to grow further as the learning record system is more widely acknowledged and used. The 2018 survey showed that 85% of the respondents who took the K-MOOC courses were satisfied with their learning outcomes, which is similar to the result in 2017 (84.5%). As of 2019, 116 institutions were providing a total of 1,703 courses at K-MOOC website (http://kmooc.kr). The number of enrollments in 2019 was 1,168,288 and the number of visits to K-MOOC website was 12,054,483.

K-MOOC plans to develop and manage excellent content which meets high demand of learners based on autonomy of participating organizations. K-MOOC is expected to expand its number of courses and participating institutions every year.

Table 1
K-MOOC in Numbers

Year	2017	2018	2019
Developed Lectures	324	510	1,703
Participating Institutions	69	95	116
Budgets (unit: KRW)	6,928,000,000	7,840,000,000	9,734,000,000

Other Open Educational Practices

As Korea's first and unique national distance higher educational institution, KNOU has been establishing its educational and student support systems based upon social needs. KNOU has computerized and automatized its services in response to an increase in the number of students and has made efforts to provide an optimal educational environment by systematizing the Office of Student Affairs.

The traditional education system focusing on college-aged students was shifted to adult-student centered lifelong education due to the changing of the times. KNOU has been striving to meet various students' needs such as career development and academic counseling. This is shown in the KNOU systems focusing on "life cycle-customized lifelong learning strategies" and "lifelong learning network strategies".

KNOU grants scholarships to a variety of social groups and students to realize higher education welfare. In addition, it supports independent student bodies so that adult learners can strengthen their social learning. KNOU is considered a world-class distance higher educational institution and lifelong educational institution because of its outstanding educational systems and social contributions. However, the number of new students is slightly decreasing due to diversified distance higher educational institutions and an increase in higher education rates. As such, it is time for KNOU to reconsider how to lead future education. In order to overcome the current issues and to grow as a more successful distance higher educational institution and a lifelong network university, KNOU should provide more quality educational services than the preexisting degree-oriented system and quickly respond to social changes. To achieve this, KNOU should operate various curricula and innovate its student service systems in the near future. In addition to quantitative growth in education, KNOU should secure qualitative excellence and provide an extensive range of quality educational contents in response to students' needs. Furthermore, KNOU should strengthen the connectivity between online-offline education and student activities, improve its mentoring system, and reinvigorate the study groups as new paradigms.

RESEARCH AREAS

Institute of Distance Education, an auxiliary facility to KNOU, carries out various policy studies and academic projects to improve the competitiveness of the tertiary education that KNOU offers. Table 2 lists the titles of research conducted from 2017-2020, which indicates the area of topics that interest and are considered important by KNOU and KNOU professors.

Table 4
List of Research During 2017-2020

Year	Research Title
2017	1. A Study on Strategies to Introduce KNOU MOOC Service, based on KNOU's Pool of Contents 2. A Study on the establishment of a distance higher, lifelong education support system for educationally disadvantaged people: A Case of learners with multicultural backgrounds 3. A Study on the plan to support innovation at national universities (PoINT) 4. A study on an analysis of educational needs among KNOU graduates: A survey of KNOU graduates between 2014 and 2017 5. A study on the development of investigative tools for KNOU learners' learning outcomes 6. A study on KNOU learners' needs per generation and ways to find new sources of students 7. A study on future distance higher, lifelong education in an intelligent information society of the fourth industrial revolution 8. A study on the IDE's performance for the last 40 years and its future development plans 9. A study on ways to reorganize the education system to create a new pool of students 10. A study on measures to introduce intensive semesters 11. A study on evaluation methods focused on learning process to improve KNOU students' learning effects 12. A study on the development of guidelines to offer face -to -face lectures in different ways 13. A study on the design of a future KNOU knowledge portal based on smart learning in preparation for the advent of the fourth industrial revolution 14. A study on the diagnosis for KNOU organization 15. A study on ways to offer new elective courses and an implementation roadmap 16. A study on the HR management of teaching faculty to support teaching and research 17. A study on a pilot operation of the tutor system improvement measures, and the development of action plans to measure their effectiveness 18. A study on the plan to establish a system to evaluate the finance of KNOU projects 19. A study on the measures to analyze KNOU faculty's research activities and to improve the university's research policies

Year	Research Title
2017	20. A study on the policies and sustainable development plan of a newly introduced department of social welfare 21. A study on the KNOU self -assessment of research (2015 -2016): A case of colleges and research institutes 22. A study on the measures to introduce a free engineering major department to KNOU 23. A study on the measures to revise the course on "Understanding of Distance Higher Education", which aims to help new students adapt to KNOU in the first semester
2018	1. A policy study on the validity of introducing MakerSpace 2. A study on exploring the use of big data and creating an application mode 3. analysis of and development direction for KNOU lifelong curriculum development and management 4. A study on the user assessment of diagnostic tools for learning readiness and customized learner supports 5. A study on the characteristics of excellent online lecture-based courses: A focus of learner satisfaction. 6. A study on the introduction of interdisciplinary departments and majors to KNOU undergraduate studies and Prime College 7. A study on the specifications of ePUB 3.0 and mobile-based digital textbooks for better interaction 8. A study on the internal assessments done by KNOU graduate school (2016 – 2017) 9. A study on the internal assessment of KNOU departments and regional campuses (2016 – 2017) 10. A study on establishing KNOU's long-term international cooperation plan 11. A study on ways to improve the working conditions of KNOU research and teaching assistants
2018	12. A study on ways to improve the competitiveness of KNOU graduate school and business school by reforming the operations and systems 13. A study on introducing a cloud-based next service platform in preparation for the advancement of KNOU learning systems 14. A study on the laws governing the KNOU establishment and operations 15. A study on the plan to organize the space of a future central library 16. A study on the plan to introduce an examination system based on a test bank 17. KNOU's role in preparation for reunification & the exploring of distance education possibilities in North Korea 18. A study on the establishment and effective implementation of special bills installing and operating KNOU law school

Year	Research Title
2019	1. A study on mid- and long-term development strategies in preparation for changes in future educational environment 2. A study on how to make full use of KNOU centers for Instructional Technology and Training (CITT) 3. A study on managing a digital, online library 4. A study on developing lifelong learning program to rejuvenate "Project Local Lifelong Learning Community Center" 5. A study on reducing the number of credits required for KNOU graduation 6. A study on the development of a design model for Spotfire bigdata analytics in U-KNOU Campus 7. A study on the trend of cloud-based virtual lab learning contents and pilot development 8. A study on service improvement of the statistical information system 9. A study on the operations of Prime College youth counseling psychology program
2020	1. Exploring Admission Support Services through Analyzing Prospective Student Resources 2. An Analysis of the Future Student Estimation of KNOU by Linking University Data with External Big Data 3. The Effect of Academic Performance and Program Management on Academic Persistence 4. Investigation and Data Analytics on Prime College Students' Learning 5. The analysis on the effectiveness of mentoring program for enhancing students support services in KNOU 6. A Study on Constructing Methods for the Performance Management System of KNOU's Development Plan 7. Analyze the convenience of using the Question Bank and Online Test System 8. A Study on the Development Plans for KNOU Scholarship System 9. Analysis of Learning Data and Design of Learning Data Analysis System of NOU 10. A Study on the Diversification of Teaching & Learning Methods in Graduate and Business University 11. A study on the enrollment size and students' characteristics of KNOU by departments 12. Prospects of Distance Higher Education and the Challenges of KNOU in Post-Corona Era 13. A Study on User Charge Models of Tutoring 14. A Research for construction plan for Museum and Archives of Korea National Open University 15. Research on KNOU Regional Campuses' Role Reestablishment 16. A Research on the Enforcement Decree of the Act on Establishment and Operation of Korea National Open University 17. A Study on the Operation of Online Attendance Classes in Real-Time

CONCLUSION

For over 50 years since its foundation in 1972, KNOU has been developing as Korea's first open university. In terms of its teaching-learning methods, KNOU has gone through continuous development.

First and foremost, the development of high-quality teaching materials has become increasingly vital. KNOU has placed a strong emphasis on releasing high-quality teaching materials, believing that these are critical to the success of beginning correspondence education. Since that time, the KNOU Press has remained true to its mission of publishing "specialist instructional materials." Based on-printed instructional materials and texts, TV, radio, and audio lectures have been offered. Without printed instructional materials, it is difficult to create good lecture content. Multimedia lectures and web-based instructions, on the other hand, can be accompanied with a variety of references and texts. This feature has a lot of potential, and it has the potential to outperform traditional printed training materials.

Second, KNOU has been looking for a technological change to bring about a transformation in broadcast media. Initially, KNOU's broadcast lectures were only available via radio and terrestrial television. Many employed students, on the other hand, found it difficult to attend TV lectures or listen to radio lectures that were transmitted at regular intervals. Students might listen to audio lectures at any time, which could substitute TV/radio lectures. Radio lectures were, in particular, losing popularity and were unable to give visual information. Radio lectures were seen as a limiting and antiquated medium in this regard. Even though they required a lot of effort to produce, TV lectures might contain a large number of audiovisual resources. The TV lectures were well received by the students, and they helped to improve their reputation. Despite the fact that the amount of lecture content is limited, TV lectures have proven to be popular due to their benefits. KNOU was able to take the lead in realizing a true learning society as a future university that leads an information-oriented society after obtaining the permission to run a cable TV channel.

Third, multimedia lectures have progressed significantly. Web-based instructions have been used in all graduate courses since the twenty-first century, while multimedia lectures have been used in all undergraduate courses since 2006. In both technology and education, they have advanced enormously. As a result, they can now replace pre-existing radio/audio and television lectures. Web-based instructions and multimedia lectures could partially replace printed teaching materials and mimic the impact of face-to-face lecturing in offline classes.

Furthermore, the widespread availability of the internet and the slow rise of cyber colleges in Korean culture have increased the standing of web-based and multimedia lectures at KNOU.

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Open University Malaysia (OUM)

02

02

Open University Malaysia: Sustainable Quality Digital Education for All

Ahmad Izanee Awang, Mohd Tajudin Md Ninggal, and Thirumeni T Subramaniam

Open University Malaysia

ESTABLISHMENT

In Malaysia distance education started at the Centre of Distance Education known as Pusat Pendidikan Jarak Jauh (PJJ) at the Science University of Malaysia (Universiti Sains Malaysia (USM)) in the 1970s. Today, almost all public universities have a dedicated centre that promotes distance education. Over 30 years later, Open University Malaysia (OUM) was established on 10th August 2000 as the country's 7th private university. In August 2001, OUM offered 4 programmes and enrolled 731 learners for its inaugural intake. OUM was officially launched on 26 August 2002 by the then Prime Minister of Malaysia, Yang Amat Berhormat Dato' Seri Dr Mahathir Mohamad. The university was established as part of the strategies to build knowledge-based society, with the motto of "University for All". Today OUM is joined by two other private open and distance learning (ODL) universities: Wawasan Open University (WOU) established in 2006, and Asia e-University (AeU) which was established in the subsequent year. Others

As a pioneer ODL institution, OUM is recognized for its experience in blended learning mode, instructional design, pedagogical approaches in teaching and learning, as well as in formative and summative assessment

(conventional and dual mode universities) were given the permission by the Ministry of Higher Education to offer ODL programmes. All who offer ODL programmes must adhere to the Code of Practice for Programme Accreditation: ODL (COPPA:ODL) developed by the Malaysian Qualification Agency (MQA) (MQA, 2019).

At the onset of its establishment, its focus was centred around education programmes where most students were government school teachers under a loan scheme that can be turned into scholarships based on their academic performance. OUM was identified as strategic host to achieve the national target of having 100% secondary school graduate teachers and at 50% of primary school teachers with tertiary education, without having the teachers leave school (MOE, 2003). Today the student population are well-distributed among four faculties: Faculty of Education (FOE), Faculty of Social Sciences and Humanities (FSSH), Faculty of Technology and Applied Sciences (FTAS), and Faculty of Business Management (FBM). In total these faculties offer 53 fully-accredited programmes via online platform and 35 strategically located learning centres throughout the country. At any one semester, the number of active students exceeds 25,000 at present from various background. The shift has an impact on the curriculum design. In the industry, soft skills are usually emphasised by employers (Sungsri, 2017). Apart from the shift in work background, a slight shift towards younger age was also observed over the years. The largest age group has shifted from 41 to 50 years old, to 31 to 40 years old learners. Observing changes in the student profile helps the university to understand and serve the learners better.

As a pioneer ODL institution, OUM is recognised for its experience in blended learning mode, instructional design, pedagogical approaches in teaching and learning, formative and summative assessment. An important strength of the

university lies in its years of experience and advancement in the development of self-instruction learning modules. The Centre of Instructional Design and Technology (CIDT) also produces supportive learning materials (technology-enhanced materials) in addition to the learning modules. The once printed modules are now hosted in a Moodle-based learning platform known as myINSPIRE. The platform is managed by the Centre for Learning Technology (CLT) who also host the online assessments. One reason for its recognition is due to the university's investment in its part-time tutors/facilitators who are trained at OUM. Many are from other higher education institutions. An annual colloquium is usually organised enabling tutors/facilitators interact with each other and full-time academic staff, and be informed of the recent developments in ODL. The management of tutors/facilitators are under the purview of the Centre for Teaching and Learning Management (CTLM).

In 2006, OUM became the first private university to implement open entry system which is known today as Accreditation of Prior Experiential Learning (APEL). The APEL system refers to a systematic process that involves the identification, documentation and assessment of prior experiential learning, i.e. knowledge, skills and attitudes, to determine the extent to which an individual has achieved the desired learning outcomes for access to a programme of study and/or for the award of credit (MQA, 2019). Today OUM's APEL Centre which function as APEL assessment centre manages three forms APEL mode: APEL A, APEL C, and APEL Q enabling open access, credit award, and award of academic qualifications respectively. In January 2022, number of APEL registrations at OUM is close to 1000. Research have shown that the learners who have joined the programmes through APEL A have equal chances of succeeding as those who have enrolment by meeting the programme entry qualification (Cheng and Heng). OUM

advocates APEL formats as a way to create access to education for all.

OUM's vision is to be the Leading Provider of Flexible Learning. This vision is motivated by the university's aim to support its adult learners who face huge demands on their time due to their commitment for work, family and society. Studies have shown that largely the factors that cause a learner to drop out are related to work, finance and family. We believe that flexible learning would enable learners learn from anywhere and at any time. Flexible must be not misinterpreted as offering flexibility at the expense of quality. OUM mission clearly states its mission as to widen access to quality education and provide lifelong learning opportunities by leveraging on technology, adopting a flexible mode of learning, and providing a conducive and engaging learning environment at competitive and affordable cost. In achieving its vision and mission, the university believes in the following five shared values: Integrity, Professionalism, Caring, Teamwork, and Innovativeness.

Similar to the rest of the world, the COVID-19 pandemic has pushed to rethink our model. With all other higher education institutions (HEIs) moving towards online learning, we face challenges and in order to be relevant we need re-evaluate what the present educational needs of our learners are and how can we create a learning experience that enable efficient achievement of the targeted learning outcomes by learners. OUM redefined the term quality education in its mission to the United Nations 4th Sustainable Development Goals (SDG). It is also important for us to be part of the global solutions. Right before the pandemic, OUM redesigned its learning skill course to focus on Learning Skills for 21st Century Learning for all its diploma and degree learners. Apart from the basics on self-directed learning, literacy skills, and 4C Skills (Creative Thinking, Critical Thinking, Collaborative Skills, and Communication Skills), awareness and knowledge on the concept of sustainability and SDGs were emphasised through topics on Global Citizenship Education and Environmental Education.

PLANNING AND DEVELOPMENT

Redefining OUM Identity

In the first 15 years since its inception, the university branded itself as a teaching university. As a private university, developing marketable programmes and supporting them became the upmost priority. In addition to programme development, accreditation and revision, other key activities were development of: (i) appropriate pedagogies for ODL through the ODL Pedagogy Centre; (ii) self-instructional learning material through CIDT; (iii) social-constructivism based facilitation strategies (Asynchronous Facilitation though Online Forum and Synchronous Facilitation through Face-to-face Tutorials/Seminars); (iv) Formative and Summative Assessment Formats; (v) Learn Managing System (LMS); and (vi) Managing Adult Learner. Intensive capacity building activities were carried out in the following areas: curriculum design (centred around Outcome-based Education since 2008), module writing skills (centred around Instructional Designs), tutor training (online facilitation and face-to-face tutoring), and writing assessment papers and writing effective feedback. Research activities were organised based on institutional needs and learner retention (Latif et al., 2009). Numerous programmes at various levels (Diploma, Bachelor Degree, Master's Degree, and Doctor of Philosophy) were developed. Later post-graduate diploma and doctoral studies were included into the list. The university developed its Quality Management Systems based on ISO standards as well as the 2009 COL Quality Assurance Toolkit Distance HEIs and Programmes. Network and linkages with regional open universities helped to strengthen the universities efforts. The reputation of the university as an esteemed ODL university made it an ideal choice for consultation and collaborations among other universities and government agencies.

Beyond 2015, the university began to explore teaching innovations through various digital content to support its learners; a Moodle-based learner management system (myINSPIRE was introduced in May 2016), online system to support APEL assessment, paperless initiatives (by introducing e-module in pdf format instead of print) and broaden its research scope to support its postgraduate learners. As a result, when the world was hit by the pandemic at the end 2019, the university was able to transform at ease into digital environment. Nevertheless, the surrounding environment also changed and became more competitive. This creates a motivation for the university to analyse its status as a sustainable quality digital education provider and transform itself through research and innovation. In 2022, under the new management led by the present President/Vice Chancellor 8 Strategic Focuses was drafted to reach its aspiration as a reputable sustainable quality digital education provider. Under these strategic objectives, additional focuses and action plans have been drafted to reach greater reputation under the national university ranking exercise. This certainly demands a change in culture. Finding the right enabler for a shift in culture require well-planned engagement with stakeholders. The centre for research and innovation has drafted action plans under selected areas

to enable innovative solutions and/or social innovations. This plan when supported by the current management efforts in network and linkages can indeed place OUM in the frontier of Sustainable Quality Digital Education.

Positioning OUM in the Frontier of Socially Responsible and Sustainable Quality Digital Education

In line with the university's aspiration to be sustainable and to offer quality digital education, OUM is hoping to position itself as a socially responsible and sustainable ODL university that offers quality state of art digital education. In realising this, the university is undertaking the following initiatives: (i) strengthening its academic programmes; (ii) establishing research projects with targeted in – niche areas, key strategic areas (which includes literacies, good health and wellbeing, technology-enhanced learning design towards creating engaged learning environment, environmental, social and governance (ESG) as well as student-centred studies); (iii) smart learner management systems; (iv) intellectual properties, social innovations and services as research outcomes; (v) regional and global network and linkages; centre of excellence and state of art facilities in selected fields; (vi) quality management system for ODL; and (vii) higher ranking in the national ranking exercise and research rating system. The initiatives consist of a short-term action plans for 2022, with extended targets for 2024, and 2026 which will be referenced against target set for the national ranking exercise and research rating system. Growth is also ascertained by a plan to offer marketable programmes, and new ventures (local and international) to ensure the sustainability of the university. Another plan that has been incorporated is Risk Management. A dedicated team will be set-up by the end of 2022 to help the university identify new trends in technology-enhanced education and its surrounding environment to develop a plan for 2030. At present planning to support technology advancement for the next five years (until 2026) are in place. What we do expect? What we hope for is greater extend of integrated and adaptive intelligent systems that corresponds to the targets under the SDGs.

Future Challenges and Opportunities

As a private higher education institution in ODL, OUM shares the market with two other open universities in a country with only 33.94 million population and only 24.65 million adults aged over 18 (estimated 2022 data from United Nation (2022 World Population Review)). This added to the competitions from the public university distance education centres (PJJs) and universities running ODL programmes, particularly in the present post Covid-19 education landscape, OUM certainly face a great challenge in sustaining itself. Fortunately, as a pioneer ODL institution and good branding, OUM has sustained itself. Its learner population are mostly self-financed working adults with children. As such the learner population are prone to experience three situational learning barriers: work, finance and family that would continue to be a challenge. Hence, the motivation for the university to establish the new Faculty of Social Science and Humanities. In addition to the offer of psychology and counselling programmes, the faculty has initiated research projects that aims to develop a

web-based psychometric profiling system to provide analysis and focused remedial solutions as one of the OUM's support services (Md Ninggal et al., 2020). The smart system will consist of several psychological assessment tools to provide evidence-based data about our learners.

At national level, open universities in the country face other common challenges. One challenge that require a collective voice concern quality assurance that also involve ranking and rating criteria that designed for conventional universities. A common voice and presence in consultations on education policies and guidelines with government agencies is also needed. Government support in the realisation of access to education for all (particularly those below certain income as well as those in rural communities is important. In addition, a joint voice will also give the universities a stronger voice in forming supportive linkage with other economics sectors, particularly with financial institutions. OUM is certainly appreciative of government initiative through the National Digital Infrastructure Lab (NDIL) in the formation of the National Digital Network Plan (Jalinan Digital Negara known as JENDELA) in 2020 under the theme Coverage for All. The plan sets targets for 2022 (Phase I), and 2025 (Phase II) in order to ensure access to internet and technology infrastructure supporting connectivity is available for all.

Likewise, the open universities in the ASEAN region face common challenges and opportunities. Together the open universities are adapting to rapid growth and socio-economic changes requiring dynamic changes to curriculum design, pedagogical approaches, use of technology in education (online delivery, assessment and environment), smart governing systems and an insight to future skills. OUM is privileged to have established a regional network with other open universities: Universitas Terbuka Indonesia, Sukhothai Thammathirat Open University, University of Philippines Open University, and Hanoi Open University. Current work initiated at the network to conceptualise 'university of the future'.

The connected world that we live today creates an opportunity to exist in a borderless platform that enable a much more efficient resource sharing. At the same time, it also enables global societies to work collectively and effectively in mitigating global crisis including climate change. In such world, as open universities we have the social responsibility and opportunity to create knowledge sharing programmes and other measures to help to create an equitable education. In this, OUM is working on new research initiatives in creating social innovations that would enable and support a wider access and through strategic knowledge sharing programmes. One that it has started to promote is literacies for 21st century. Phase I of the literacy knowledge dissemination webinar was organised in July 2022. It focused on English language literacy, numeracy, information literary, digital literacy, and media literacy. The second phase planned for January 2023 would focus on health, environmental, civic, and financial literacies along with globalisation. The organising team is also hoping to include

future literacy that is promoted by the United Nation. It hopes to continue to support by creating awareness particularly in STEM and others areas that requiring such support.

MANAGEMENT

Organizational Structure

OUM operation is well distributed throughout the country with 35 learning centres, thus has presence across the nation. The learning centres serves as the contact point for learners across the country. OUM's operation is centred at the headquarters at in Kelana Jaya, Selangor. OUM also operates outside Malaysia through various partners through shared functions that may vary from one partner to another.

OUM is managed under the leadership of a President/Vice-Chancellor. The University Board of Governors provides the university academic and industrial guidance to OUM's role as a HEI provider that contributes to nation building. There are four key functions that are directly under the president/vice-chancellor: human resource, legal, corporate communication, and quality assurance. OUM organisation structure is shown in Figure 2. All academic matters are under the leadership of the vice-president (academic). In addition, there are four other key functions that are managed separately, namely finance, registry, business ventures, and digital services.

Figure 1
OUM Learning Centres in Malaysia

OUM is managed under the leadership of a President/Vice-Chancellor. The University Board of Governors provides the university academic and industrial guidance to OUM's role as a HEI provider that contributes to nation building. There are four key functions that are directly under the president/vice-chancellor: human resource, legal, corporate communication, and quality assurance. OUM organisation structure is shown in Figure 2. All academic matters are under the leadership of the vice-president (academic). In addition, there are four other key functions that are managed separately, namely finance, registry, business ventures, and digital services.

Academic Affairs

All academics programmes offered at OUM are accredited by the national qualification agency. At present, OUM offers a total of 53 fully accredited programmes ranging from diploma to doctoral degrees. These are offered through four faculties (FOE, FSSSH, FTAS, and FBM). Each faculty is headed by a Dean and supported by a Deputy Dean. Each programme is based on semester system and is managed by a Programme Director. Meanwhile, the courses are managed by a course leader. Admission to each programme are done through online and verified through submission of copies of documents (on entry qualification(s) and identity) at any learning centres. Once registered, learners are asked to carry out first time login by creating their unique username and password. They are encouraged to use OUM email address for all form of online communication with OUM (academic and support services).

The faculties are supported by four centres. At OUM, admission to programmes is also possible through accreditation of prior experiential learning (APEL). The APEL Centre is headed by a Director manages the entry to the programmes through APEL A, credit transfers through APEL C, and the conferment of a qualification through APEL Q. The heart of the centre is in the recognition, assessment and evaluation of Prior Experiential Learning and the promotion of the Experiential Learning Pedagogical Approach.

Research, Publication and Innovation activities of the faculty members are governed through the Centre for Research and Innovation (CRI). CRI is headed by a Director, has eight key functions: managing the rating and raking exercises, research funding, institutional research projects, publications (and supporting events and media), capacity building initiatives, innovations, services, and research collaborations. The year 2022 marks a big change in research, publication, and innovation focus. The centre through the support of the new management is able to raise greater awareness, activities and incentives to create research culture. Eight focus groups have been formed to target the achievement of greater growth, visibility, sustainability, and harmony (2022 Strategic Objectives at OUM) through research, and innovation.

Executive Management Committee

OUM
OPEN UNIVERSITY MALAYSIA
DU009(W)

Assoc Prof
Dr Ahmad Izanee Awang
President/Vice-Chancellor

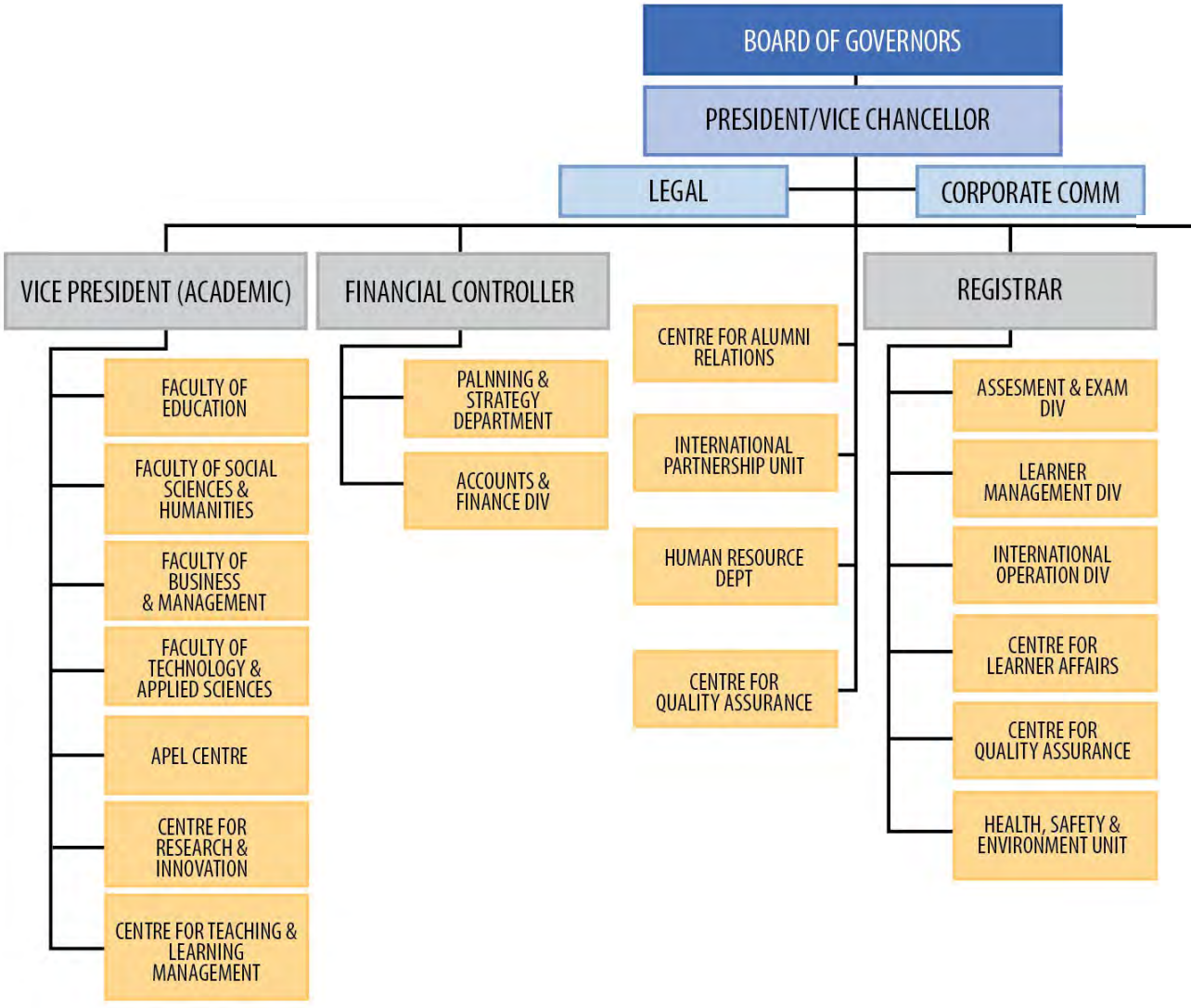
Prof Datuk
Dr Mohd Tajudin Md Ninggal
Vice President
(Academic)

Prof
Dr Siti Aishah Hashim Ali
General Manager
(Learner Experience
and Technology)

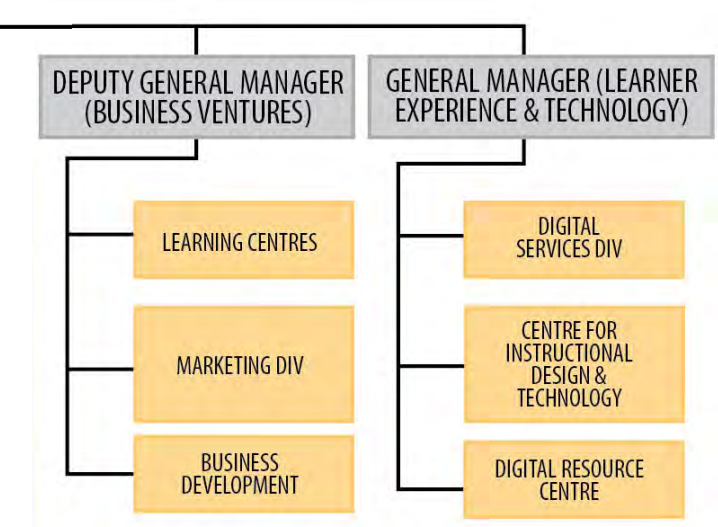
Assoc Prof
Dr Yon Rosli Daud
Deputy General Manager
(Business Ventures)

Dr
Mohd Nazri Mohd Noor
Registrar

Figure 2
OUM's Organisational Structure



The Centre for Learning Technology (CLT) is responsible for creating an engaging learning environment (myINSPIRE) that promotes self-directed learning by hosting self-instructional learning materials named as learning modules (developed by CIDT), assessment processes, online forum, and e-tutorials. Learner satisfaction over the learning environment is a key concern at the university (Noor et al., 2016). The programme delivery is designed to enable learners learn anytime from anywhere. CLT managed by a Head of Centre also hosts: (i) open educational resources, and (ii) massive open online course (MOOCs).



In addition to the faculty members, the **teaching and learning process** at OUM is also supported by part-time e-tutors and e-graders. The tutors/facilitators are managed and trained by the Centre for Teaching and Learning Management (CTLM). The centre managed by a Head of Centre works primarily at designing how learning can be supported through effective facilitation using the modules. The centre organises annual colloquium to ensure that OUM part-time tutors are also well-informed with the best practices and recent development in teaching and learning. Learner Experience over all teaching and learning efforts is also another key concern at the university (Md Yusof et al., 2022).

Largely courses at OUM are assessed using three forms of **assessment**. Firstly, Assessment as Learning. This refers to built-in self-assessments with feedback that is hosted under each course in myINSPIRE. This assessment format, mostly in MCQ format helps learners to perform a quick test to determine their basic knowledge. During mid-semesters, learners are given assignments, which are a form of formative assessment in most courses. This is known as Assessment for Learning. The feedback for a given assignment can also be elaborated using both online forum and e-tutorials. At the end of each semester, most learners also sit for the final examination, which are a form of summative assessment known as Assessment of Learning. Quality of the assessment it up most important regardless of the type of assessment to ensure its effectiveness in learning and validity and reliability in measuring the targeted outcomes under every course. The university continues to enhance the quality and the methods of the assessments, the architecture of the question bank, usage of latest technology, and proctoring to improve its assessment system. OUM is also exploring distributed assignment in order to achieve a holistic measure (Fadzil, 2019).

The nature of **practical** session varies from one course to another. Examples include laboratory session, clinical session, field work and more. These are designed particularly to develop industry relevant psychomotor skills. Most sessions are carried on by renting the right facility (often using facilities at other HEIs across Malaysia) and their teaching resources (demonstration, monitoring

and assessment). The difficulty due to the prolonged movement control due to Covid-19 pandemic, forced the university to opt for modified assessment, and explore use of technology and media to enrich the development of the psychomotor skills.

The above academic processes are fully supported by three specialised service: (i) development of self-instruction learning materials or modules at CIDT, (ii) library service, and (iii) digital services. These are governed under the purview of a general manager.

Modules featuring content and use of instructional design are the primary delivery mode. Using carefully designed activities, a module writer can prompt learners to explore beyond the module pages. OUM produces modules only in e-format (using pdf format). Module development at OUM is undergoing a transformation process in order to enrich the modules using audio, video, animation and interactivities. This enable creation of an integrated resource material. Cyclic revision of modules ensure that the content stays current and relevant.

OUM Digital Library has up to 95% digital resources with 30 well known databases including Springer Link. All new purchases made only for digital resources such as e-books, and e-journals unless the options are limited to print materials. The Head of Library also ensures additional services such as workshops in information literacy.

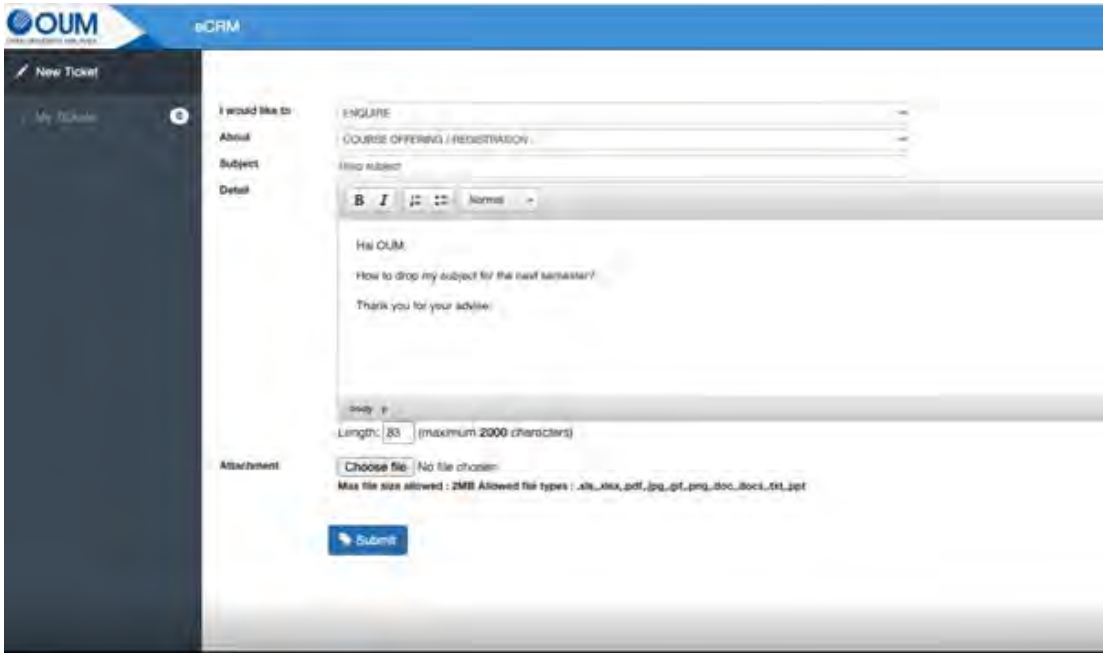
Digital services provide various supports from technical support to system development to ensure efficient and effective use of technology in all operations at OUM.

Administrative Affairs

All administrative affairs supporting services are governed by the Office of Registrar. Operations are divided into Programme Accreditation Unit (PAU), Assessment and Examination Division (AED), Learner Management Division (LMD), International Operation Unit (IOU), Centre for Learner Affairs (CLA), and Health, Safety and Environment (HSE) Unit.

Once a learner enters the system, the student data, course management and final year project are managed by the units under LMD. Assessment, Examination, and Learner Profile including their Graduation Landscape are managed by AED. All international learners that are registered with partners are managed by IOU. At all premises, all matters related to HSE are managed by the HSE Unit including student identity cards. Learners often seek the needed support from learning centres within their locality. Nevertheless, any learner seeking additional support are referred to CLA. Learners may come directly to the centre at the main campus (HQ), or contact through an online system known as eCRM (refer Figure 3). All entry (from complains, enquiries, to feedback are given a ticket and the matter will be managed within a time frame. In addition, CLA works closely with all learning centres to conduct orientation programs for all new learners.

Figure 3
The View of the eCRM Ticketing System



At present, CLA in collaboration with CRI has developed a new orientation program as part of the digital transformation. The programme known as the OUM Virtual Orientation programme will serve all new learners and can be also referred to by all senior learners takes learners through the first stage of their learning journey. Upon completing, learners will receive a certificate of completion. It is believed that such programme can help retain learners in the system. In addition, CLA, learning centres and faculties separately or jointly organises various workshops to support learners through their journey. A popular workshop is on how to write an assignment paper (an essay). The workshops are part of the university's social responsibilities.

CLA also offers the e-counselling services and may also opt to make a face-to-face appointment with a counsellor. At OUM, good health and wellbeing is a priority. In order to ensure effective support are available, OUM promotes good mental health and wellbeing among its staff and learners. This area has gained more attention during the pandemic. Researchers in the field of psychology and counselling at FSSH are working together with CLA to develop psychometric tools to study the needs of both staff and learners, and provide workable solutions.

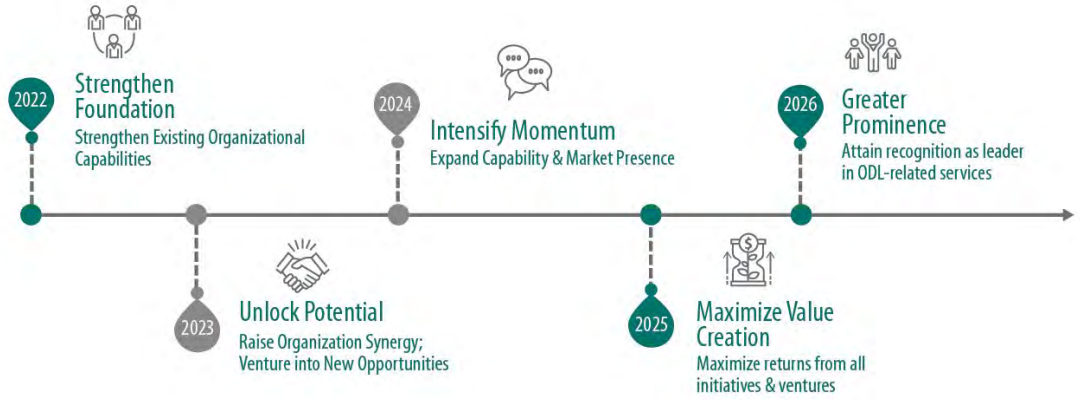
Our Focus

Since the first inception of OUM 22 years ago, the university has continuously providing quality online education to its students. OUM's visibility as an ODL provider of choice known for sustainable business model in delivering world class quality digital education solutions and social innovations. This is an aspiration drives on what we would focus on in the coming years.

DIGITAL TRANSFORMATION AT OPEN UNIVERSITY MALAYSIA

Digital transformation at OUM supporting the Strategic Roadmap that is developed to bring the university to greater heights and recognition within the next 5 years (refer Figure 4). The open education philosophy embodied at the university is built on the hope to capture the open education concept of opening educational access to all. Education and knowledge are public goods and that everyone has the right to access quality education (Belawati, 2014). OUM's open education philosophy also embodies Malaysia's National Education Philosophy that focuses on on-going efforts towards the development of an individual in a holistic way (MOE, 2013). In addition, OUM is also drafting a new open education philosophy by encapsulating its vision to offer flexibility for its learners who are by large working adults; its mission to widen access to quality education by creating a conducive and engaging learning environment through digital transformation; as well as key global concepts that it believes in, namely sustainability, and inclusivity. As part of its new focus, OUM is developing a research programme to raise the level of key literacies among the public.

Figure 4
Phases of OUM Strategic Roadmap (2022-2026)



As a private open university, OUM develops market driven educational programmes. OUM is re-evaluating its programmes and crafting its niche areas under each faculty. Research and innovations are also expanded based on the identified niche areas. In 2023, OUM hopes to venture into niche areas and markets and strengthen its presence within the identified areas and maximize value creation in the subsequent years. Figure 4 shows the se progression towards securing recognition as a leading open education that continues to evolve through research and innovation cultures.

The efforts to create digital education environment during and post Covid-19 phases occurred at fast-rate under the necessity to cope. Such situations can also bring about new opportunities. Table 1 provides a list of initiatives in the last two years that either have been completed or undergoing further transformation towards the realisation of sustainable quality digital education that place learners before technology.

One of the most treasured products at OUM is the module. Major processes in module development are writing, content moderation, instructional design (ID), editorial, graphic design, and desktop publishing. Originally OUM modules were printed by its sister company, METEOR Doc. Later modules were published in pdf formats and uploaded on learner management system. At present, the team at CIDT are testing the development of interactive module. In addition, OUM produces various support materials using various resources. Examples include H5P, Flipbook, Canva and others.

The module is hosted by myINSPIRE, which is a moodle-based learning environment. This environment is customised and enhanced by CLT. Within this environment, e-lesson, additional learning materials, online forum, link to e-tutorial schedules, assessment are also hosted. The integration of various learning activities on a single platform will be enhanced through design and architecture.

CLT is proposing a research to explore the use of analytics, user-interface analysis, machine learning and artificial intelligences in creating an intelligent and effective online learning environment in order to facilitate the achievement of learning outcomes in courses. Meanwhile, the platform is hosted under myOUM system embedded within the OUM website. Website design and network management is provided by digital services. Mobile version of the website enables learners to access all systems.

E-Lessons are introduced for all courses during the pandemic to ensure that the learners are motivated and feel supported by providing additional material and self-test aligned to the targeted learning outcome under every topic for 10 weeks.

Assessment format was also revised during the pandemic. Assignment was broken into several task with Task 1 requiring learners to engage in collaborative learning via the online forum. The university is evaluating the effectiveness of this format before further improvement to the assessment can be carried out.

Another change caused by the pandemic is the cancellation of the 6 hours Face-to-face tutorial/seminar sessions. The university offered 8 e-tutorial sessions by the e-tutor who also manage the online forum. Each session is one hour long. Ten sessions are offered for selected courses and post-graduate courses. These sessions are conducted via Google Meet.

In addition to the aforementioned consequences, the transition to Online Final Examination Mode requiring proctoring is another effort in improving OUM's assessment system. The university is looking forward to enhance the format of the online final examination as well as the proctoring mechanism.

The digital library at OUM was named as Tan Sri Dr Abdullah Sanusi Digital Library (TSDAS Digital Library) in 2004 in memory of OUM's first president/vice-chancellor. The library is focused towards building its digital resources: e-books, e-journals, e-theses and more. Currently, it subscribes to 30 online databases. At present, only 5% of its resources are available in print format. Printed materials are only purchased when digital resources are not available.

An area of concern is the offer of the practical sessions. CRI is proposing a research project to create virtual spaces using few models suited for all areas of study with the support of the creative team in CIDT. A present literature review is being carried out to study augmented reality, virtual reality, mixed reality and extended reality. This scope is now widened to explore the development of metaverse to support the digital learning environment at OUM.

MOOCs AND OTHER OPEN EDUCATION PRACTICES

OUM offers various OERs that are available to the public. MOOCs at OUM are developed based on the XMOOCs format. Learners have free access to 30% of a MOOC. Remaining 70% are available at an affordable price. Anyone can access OUM OER materials by visiting the site at https://myoer.oum.edu.my/. OUM through its digital transformation plan has given a new facelift to its OER and MOOCs. In promoting lifelong learning (LLL), the digital education system is being expanded to offer learning opportunities by offering OERs, MOOCs, Micro Credentials. OER are learning resources that do not involve a course structure. MOOCs are non-credit based courses, while Micro Credentials are smaller units that would eventually make up a single credit-based course. In terms of their development, OERs are more mature, while MOOCs are on pilot stage, and Micro Credentials are still under conceptualisation stage. All three formats are offered to OUM community and the public.

Table 1

Initiatives Under Digital Transformation Phase at Open University Malaysia

Components	Developer	Host	Remark
Interactive e-Module	Faculties and CIDT	CIDT	A new model is being tested
Intelligent Online Learning Environment	CLT	CLT	On-going efforts using analytics
e-Lessons (embedded with Self-Test)	Faculties	CLT	New in-house materials are being created to support the e-Lesson
Assessment: Promotion of collaborative learning by introducing Task 1 that uses the online forum	Faculties	AED, CLT	OUM continue to explore its assessment
E-Tutorials	Faculties	Faculties	e-Tutorials replaced the Face-to-face Tutorial Sessions
Online Final Examination	Faculties	AED, CLT	Collaborative research is in progress to improve quality and format of assessment under FOE
Digital Library	Digital Library	Digital Library	Research is being initiated to promote the information literacy among OUM community and the public
OER	Faculty	CLT	Continuous effort
MOOCs	Faculty	CLT	New Pilot- continuous effort
Micro Credentials	Faculty	APEL Centre	New- Continuous effort

RESEARCH AND INNOVATION AT OPEN UNIVERSITY MALAYSIA

OUM is funding most research projects at the university. The university allocates RM 600,000 research fund every year, and hope to raise it up to double it to RM 1.2 million in 2026. At present two of the research projects are funded through the Erasmus+ programme. The identification of niche areas in Table 2 will help the university to achieve its targeted research landscape (shown in Table 3) and support the growth of PhD candidature. OUM has a clear expectation of the funding given to its researchers in terms of the outputs and outcomes. At present, most projects produce at least two indexed-journals and two other form of publications. OUM expects greater outputs with the new initiatives that it is strategizing at the present.

CRI targets for each niche areas (targeted 25) grow into research clusters with at least three research projects that are headed by three different PIs to support the landscape in Table 3.

The identification of niche areas is crucial to the realisation of such aspirations.

Table 2
Strategic Niche Areas at OUM

FIELD	NICHE AREAS	
EDUCATION	PEDAGOGY	Proposed
	ADULT EDUCATION AND ODL	Proposed
	21st CENTURY LITERACIES (+CURRICULUM)	Proposed
	MEANINGFUL LEARNER EXPERIENCE IN SMART LEARNING ENVIRONMENT	New
TECHNOLOGY	SMART LEARNING ENVIRONMENT - CREATING MEANINGFUL LEARNING EXPERIENCE FOR ALL	New
	USER EXPERIENCE	New
	CREATIVE CONTENT AND INCLUSIVITY	Proposed
	SMART SOLUTIONS	Research in progress
NICHE AREAS UNDER THE FACULTIES		
FOE	EARLY CHILDHOOD EDUCATION	Proposed
	EXPERIENTIAL LEARNING	Proposed
	DIGITAL EDUCATION	New
	DISTRIBUTED ASSESSMENT FOR ODL	Research has been initiated

FIELD	NICHE AREAS	
FSSH	PYSCHOLOGY & COUNSELLING	Research has been initiated
	ISLAMIC STUDIES – SYARIAH COMPLIANCE	Research has been initiated
	COMMUNICATION IN DIGITAL SPACE	New
	WORLD LANGUAGES	New
FTAS	SUSTAINABLE AND GREEN SOLUTIONS	Research has been initiated
	OPEN EDUCATION FOR STEM/STEAM	2nd Proposal
	DATA SCIENCE	New
	GOOD HEALTH AND WELLBEING	New
FBM	FINANCE AND ACCOUNTING	Research projects have been initiated
	FUTURE SKILLS (+EMPLOYABILITY)	New
	DIGITAL MARKETING	New
	ENVIRONMENT, SOCIAL AND GOVERNANCE	Proposed

The first two fields, Education and Technology were strategized based on the importance at university level. Four niche areas have been identified under each field. An example is the niche area under Creative Content and Inclusivity under the Technology field. CRI is working on these through two different projects with two partners: research teams and the Creative Team from CIDT. The first project that was initiated under this theme is the Virtual Orientation, while the second is on Basic Competency Model that developed the OER on 4C (Ismail et al., 2022). A page from the OER is depicted in Figure 5. The niche areas under the faculties (FOE, FSSH, FTAS, and FBM) were drafted based on the strength of the programmes offered.

The first phase in establishing a niche area is identification of a team under a leader. The eight niche areas under the university focus will be under the purview of CRI through a selected researcher. The rest will be under the purview of an identified expert researcher. There can be more than one research project under each niche areas. The expert researchers may or may not be the principle investigator (PI) of the projects under the niche area he is attached to. Each niche area is at a different phase.

CRI is responsible to manage all grants (internal and external) at the university. Initial grants are provided by the university. CRI supports the growth of all PIs to be become successful PI with meaningful research outcomes.

Figure 5
OER on 4Cs: Creative Thinking, Critical Thinking, Collaborative Skills, and Communication Skill – Page on Creative Thinking

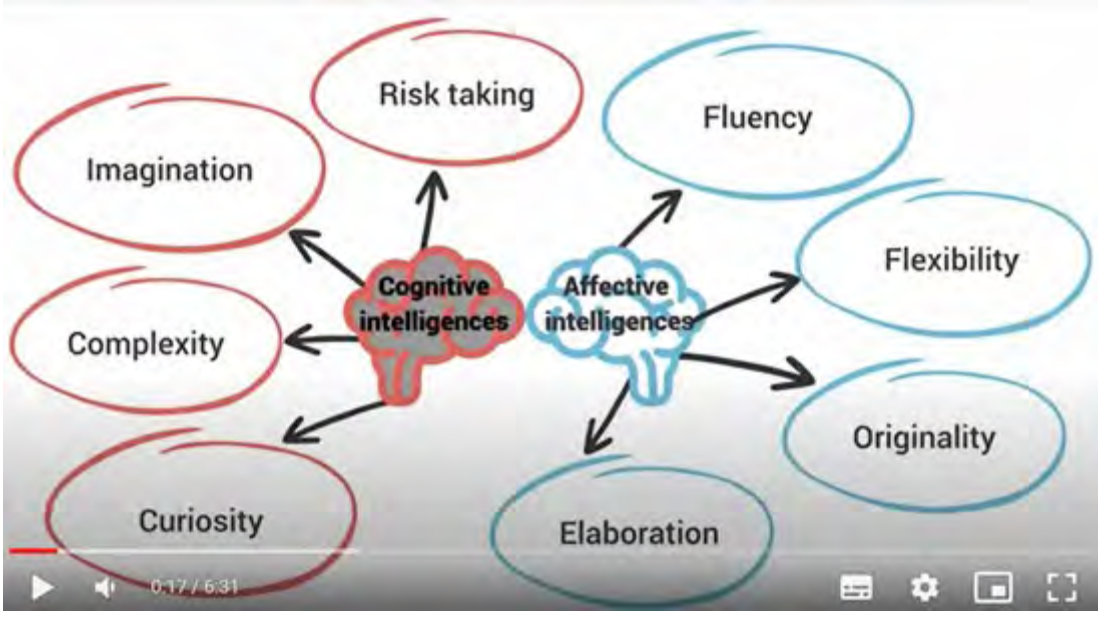


Table 3
Strategic Plan - Research Landscape

	2022		2026	
Grant Type	N (PI)	Value of Grant	N (PI)	Value of Grant
University Grant (Internal)	15_20.008.2022 Expected: 20	RM 459,220.00 Expected: RM 600K	55	RM 1,200,000.00
National Grants	0	RM 0.00	12	RM 1,000,000.00
International Grants	2	RM 905,740.04	4	RM 2,000,000.00
Industrial Grants	0	RM 0.00	4	RM 400,000.00

In the past, OUM has focused its research on learner-centred research titles focusing on learner retention, learner's perception on quality of services, at-risk learners (learners who are at-risk not meeting the CGPA criteria for graduation. The research landscape has been changing over the recent years to focus more on ODL, technology-enhanced education, and in various academic areas. The following are the highlight under each of the identified niche areas.

Pedagogy and Adult Education

While funded research projects were not a priority, there were some institutional projects, and large number of trainings by well-known ODL experts in OUM. E-learning readiness was explored as early as 2004 (Karam Singh and Abas, 2004). Successful delivery of e-learning in the university was depicted by 2010 (Abas, 2009). One area that flourished then is pedagogy. OUM had a centre known as the ODL Pedagogy Centre (ODLPC). An example of work carried out at the centre include learning objects (Darshan Singh and Ho, 2006). Experts has been identified and research has been proposed under this theme. A research proposal under the OU5 collaboration is expected to be submitted at the end of year. Future projects are expected under two themes: (i) Pedagogies, namely experiential, authentic, transformation and innovative pedagogies; (ii) Andragogy and Open and Flexible Distance Education.

21st Century Learning Skills: Literacies and Curriculum Design

Under the new leadership, OUM is creating a focus in social innovations in education and is committed towards the promotions of 21st Century Literacies. The work on 21st Century Learning Skills was been initiated in 2018 with the introduction of OUMH1602 Learning Skills for 21st Century. A research project that focused on 4C Skills is near completion. A new project has been proposed under the theme 21st Century Learning Skills under two sub-themes: (i) Basic Literacies – English Language Literacy, Numeracy, Information, Digital Literacy and Media Literacy, and (ii) Applied Literacies – Environmental Literacy, Health Literacy, Financial Literacy, Civic Literacy, and Globalisation. In addition, a project on 21st Century Learning is expected from the team. Recognising that curriculum has to be in-line with the educational landscape that changes with socio-economic changes, this theme, much like the theme on Pedagogy will remain in the interest of the university.

Learner Experience and Learning Environment

While there has been extensive work in these areas, there no documented research. At present, CRI is in discussion with CLA to propose the identified research areas: Meaning Learner Experience, Smart Learning Environment, and Study on User Experience. Current research project on the development of a predictive model on learner retention, academic progress and market analysis on learner's preferences can prove to have significant contributions to these new niche areas (T Subramaniam et al., 2022). Research under this theme can further expand into many other projects (or linked to other research projects). This will help to enhance the project outcome and build a better understanding of the inter-relation between learner's experience and the learning environment.

Creative Content and Inclusivity

Since the beginning OUM has invested heavily in Instructional Design. It even offers a post-graduate programme in the area, Master of Instruction Design and Technology. At present, themes under Learning Design are also being explored under along with Universal Design (UD) Principles. Inclusivity is the key theme in UD. Content creation has always been seen as a mergence of education framework and technology enhancement. CRI work closely with the Creative Team from CIDT in order add another dimension to the mix: Art. Hence the theme Creative Content. The team explores the use of mixed-media, art, learning designs and technology to 'create' the creative content that helps the learners to achieve the targeted learning outcomes of a specific course effectively. The team hope to study the mix in order to develop a guide for educators. The team hopes to collaborate with an industrial partner for better access to latest technologies. By ensuring UD in content design, the teams hope to promote inclusivity.

Smart Solutions

Content alone will not bring OUM to the frontiers of open education. Systems particularly, smart and integrated solutions are needed. OUM is inspired to ensure effective use of analytics, machine learning, and artificial intelligences. One such solution that is being worked under a university's internal fund is the development of predictive models to that can identify learners who has potential to drop-out, to not meet the CGPA criteria to graduate and thereby introduce interventions, as well as detect the impact of the interventions that has been introduced. The model is based on existing data that will be built to evolve using time-series data capture. The existing and real-time data that are used to build the model will support many different types of solutions at OUM. This emphasizes the need for CRI to ensure academic freedom, sharing of research findings, foster openness while ensuring that the fund invested by the university results in tangible outputs that also be given consideration for decision making. The second project is the system that would support the literacy project.

Similarly, each of niches areas under respective faculty has its own history, present scenarios and aspired future. One niche area that has been identified, Sustainable and Green Solutions is the general theme that is used to manage PhD students under STEM that engaged and connected through the common theme on Sustainable Development, which marks the creation of window for inter-disciplinary studies. That one direction under an expert researcher. The university hopes each academic can craft their own area of expertise and be engaged in consultancies.

As a mean to share and connect the expertise of OUM academic with the public, knowledge sharing webinars are organised by CRI every year. Knowledge Dissemination Note accompanying the webinar is also published for the public consumption.

CONCLUSION

OUM as the pioneer ODL institutions aims to provide sustainable quality digital education that meets the national and global market needs. Under the new strategic roadmap, OUM has created plan under four pillars: growth, sustainability, visibility, and harmony. In order to remain in the frontier of global open education, the university must collaborate and engage in collaborative research with other ODL players. Emphasis in research is also motivated by the need change and to exist in the frontier of open education and in the selected niche areas amidst global challenges. Reputation as an HEI through identified ranking and rating systems is a necessity in today education environment. OUM needs to create a reputation for the identified niche areas under the education and technology research portfolio. A smart and integrated digital education environment supported by research must be realised. Another strategy is to cooperate with agencies providing professional qualifications. In drafting such programmes, the need to progress from one level to the next level of education, particularly in research based post-graduate system require strong research background in the field of studies. In addition, OUM has plans to actively engage in social innovations and contribute in efforts for creating equal opportunities through education and particularly equity in education.

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Sukhothai Thammathirat Open University (STOU)

03

03

Open and Distance Education in Thailand: Sukhothai Thammathirat Open University

W. Taweewat, S. Sumalee, J. Darunee, C. Thanathnuth, M. Kemmanat, B. Patthanan, A. Phantipa, T. Piyapot, and N. Sungworn

Sukhothai Thammathirat Open University

Presently, Thailand has three types of education systems: formal education, non-formal education, and informal education systems. The conventional education system is an educational system that determines the objectives, method of study, curriculum, duration of study, assessment system, and graduation requirements for Primary and Secondary (Grade 1 to Grade 12) Schools as well as for Higher Education level. In addition, in the year 1995, the Foundation for Distance Education via Satellite under royal patronage was established with the grace of His Majesty King Bhumibol Adulyadej Maha Bhumibol Adulyadej (King Rama IX). His Majesty the King's determined to reduce disparities in basic education, solve the problem of teacher shortage, as well as to increase teacher's quality, relevance, and qualification by providing education to the people in a thorough, equal and quality manner using the latest satellite technology, which was the most advanced technology at that time. (Watthanakuljaroen, 2022).

STOU is committed to providing equity and quality lifelong learning for all to respond to the digital age.

Sukhothai Thammathirat Open University (STOU), the first open university in Thailand, has provided lifelong learning under the distance education system to respond to individual and societal needs. STOU aims to produce qualified graduates, to contribute to human development and to promote learning opportunities for all Thai people. Over 42 years, more than three million graduates have reflected the attempt of the university to employ a distance education system to provide lifelong learning for all.

ESTABLISHMENT

Sukhothai Thammathirat Open University (STOU) was officially established by the Royal Charter on September 5, 1978, as Thailand's eleventh state university. His Majesty King Bhumibol Adulyadej (King Rama IX) graciously bestowed the university its name in honor of King Prajadhipok (King Rama VII), who once held the title "Prince Sukhothai Thammaracha" prior to his accession to the throne.

STOU has followed lifelong education philosophy by employing the distance learning system to expand higher education opportunity to all Thai people regardless of gender, age, social status, and residence location. Since its establishment, STOU has enabled the development of individuals and communities throughout Thailand and beyond.

On October 24, 1978, His Majesty issued royal mandates appointing the first University Council and appointing Professor Dr. Wichit Srisa-an as the first president, effective from January 1978. After approximately two years of preparation, STOU offered its first academic class on December 1, 1980, with three schools of study: Educational Studies, Liberal Arts, and Management Science. Studies at STOU are not confined to traditional classrooms. STOU distance learning system is a multimedia system which consists of main media and supplementary media. At the beginning, the main media were printed materials supplemented by

radio program, television program and face to face tutoring. The distance learning system has been developed continuously. In 2000, STOU has introduced the new model by employing computer-based media in parallel with printed-based media.

At the beginning stage, STOU offered bachelor degree and certificate programs in three schools. Since then, various fields of study were introduced which become twelve schools. Later on, the master degree and doctoral degree programs were offered respectively. Moreover, each subject in the bachelor degree programs was organized to be offered as an achievement certificate program to the general public, enabling to obtain knowledge from the university by accessing through various media.

In 2017, the University Council initiated to reform STOU to fit with the changes of social environment and technology in the following aspects: (1) applying the research findings and needs of stakeholders to develop mission of the university; (2) introducing blended learning and mid-term examination; (3) employing more channels of distance learning through various forms of ICT, social media, social network, and applications; (4) developing personnel in accordance with the Professional Standard Framework (PSF) of Advance HE of UK.; (5) developing Rajamangalaphisek Education Park and constructing the statue of King Rama 9; and (6) adjusting university regulations to be more flexible, efficient and transparent.

PLANNING AND DEVELOPMENT

Sukhothai Thammathirat Open University, a state university, is administered with the budgets from two sources: the government and the university incomes. Therefore, the planning of the university is focused on responding to the development of the country in various aspects including the provision of instruction at the higher education level, the conduct of research, the provision of academic service to community, and the preservation and maintenance of art and culture. STOU has formulated the university development plan in three phases as the following.

The 20-Year University Development Plan (2018–2037)

Since the contexts of Thai society and world society are changing all the time, the Thai government has formulated the Thailand's 20-Year National Strategy (2018–2037) and the Twelfth National Economic and Social Development Plan (2017–2021) to set the direction for mobilizing Thailand toward the "Security, Prosperity, Sustainability" goal. Meanwhile, STOU has the 20-Year University Development Plan (2018–2037). This development plan focuses on adjusting the university to cope with more challenging external contexts. The aims of this plan are to create the new and stronger identity of the university, to focus on provision of up-to-date lifelong education including formal education, non-formal education, and informal education, and to respond to the needs for learning and skills of the future world. Moreover, the plan focuses on both research for creation of innovations that support the university's instruction and social innovations affecting the national development; and on the integration of work performance from all sectors including the state, private, and community sectors in order to collaborate for mobilizing the development of areas under the expertise and main functions of the university. Details of the 20-Year University Development Plan are shown in Table 1.

Based on the Table, it specifies the relationship among the vision of STOU for the next twenty years' framework, mission, STOU identity (2021-2037), and learner identity. The operation under the plan is divided into four phases with five-year period of each phase. Its goal is to strive toward being "a leading organization that provide lifelong self-learning opportunity for all people".

Since early 2020, Thailand and other countries around the world have strived to deal with negative impacts caused by the COVID-19 pandemic not only on economic, but also on educational systems worldwide. As a consequence, the university operation based on STOU Development Plan has to be adjusted in order to cope with the situation. On the other hand, this outbreak becomes an opportunity for the university to rely on the online system for not only instruction (in its operation more rigorously), but also for final examination with over 18,000 students all over Thailand and abroad.

The 5-Year Development Plan (2018-2022)

STOU has the five-year development plan which is the determination of the operation plan of various work units of the university during the next five years on a continuous basis (Rolling Plan). Every work unit must determine its routine operation plan and the operation plan for the works designated specifically for each fiscal year for the duration of five years that covers instructional media production and improvement plan, curriculum improvement for every five years, and investment plan, etc.

Table 1

The 20-Year University Development Plan (2018-2037) and the Transmission into Activities/ Projects to Be Undertaken in the First 5-Year Development Plan (2018-2022)

20-Year Vision for STOU	"Being a leading open university of the world that uses distance education system technology and innovations to create lifelong self-learning opportunity for everybody"			
Reinventing University	Area-Based and Community Strategic intent University (Adjusted in accordance to the verdict of the University Council, February 27, 2020)			
"Goals of STOU Development Plan (2018-2037)"	Phase 1 (61-65)	Phase 2 (66-70)	Phase 3 (71-75)	Phase 4 (76-80)
	Reform for Strengthening of Infrastructure 1. Development of the organization toward the provision of quality educational services with innovations and creative thinking 2. Development and improvement of the programs to be relevant to the needs of people, community and society 3. Development of digital education 4. Creation of Educational equality and reduction of educational disparity in terms of both quantity and quality	Development of Contents Quality Suited for Technological Advancement 1. STOU Platform 2. Collaboration with the state sector, private sector, community, and people in society 3. Big data 4. Shared Platform & Shared Economy	Universal Platform & Open university	Striving toward "Being a leading organization that provide lifelong self-learning opportunity for all people"

Mission	1. Provision of lifelong education on a continuous basis 2. Conducting research to develop the body of knowledge and innovations to be utilized for development of the people, community, society and country 3. Provision of academic services for integration of knowledge to be utilized for the benefits of the community, society, and country to achieve prosperity and sustainability 4. Learning on the conservation, restoration, transmission and dissemination of art and culture 5. Development of the organization to achieve security, prosperity, and sustainability under good governance principle
STOU Identity (2021-2037)	1. The distance education system and being an open university 2. The system that facilitates self-education 3. The variety of educational media in terms of contents and lifelong learning model
Learner Identity	Having discipline and enthusiasm for learning

The Official Annual Operation Plan

The annual planning, or the so-called "Official Operation Plan of Sukhothai Thammathirat Open University" is the determination of the goals and indicators of the operation of work units within the university in each fiscal year of Thailand (October – September of the next calendar year). The work units that have to prepare the annual official operation plan are 12 schools and 11 supporting work units, as shown in Fig. 2STOU Administrative Structure.

The annual official operation plan of various work units in STOU is the taking of the university development plan, policies, and mission of the university to interpret into the vision, mission, indicators and performance appraisal for the specific work units of the university. The indicators based on the main mission of the work unit and the indicators additionally specified by the university are identified in order to mobilize the operation in accordance with the policies of the university, such as the indicator on publication of work outcomes at the international level. Once university policies have been decided upon, many different operations could be used to implement it. The following is a sample of policy implementations at STOU.

(1) Development of teaching models that facilitate learning and adopt technology in learning environment. For example, blended learning activities at bachelor's degree level, Microsoft Teams for online teaching and learning environment at graduate level, online midterm and final examinations at bachelor's degree level and online comprehensive examinations at the graduate level.

(2) University reform enables university administrators to effectively and efficiently work with more flexibility in responding to the vision and mission of STOU.

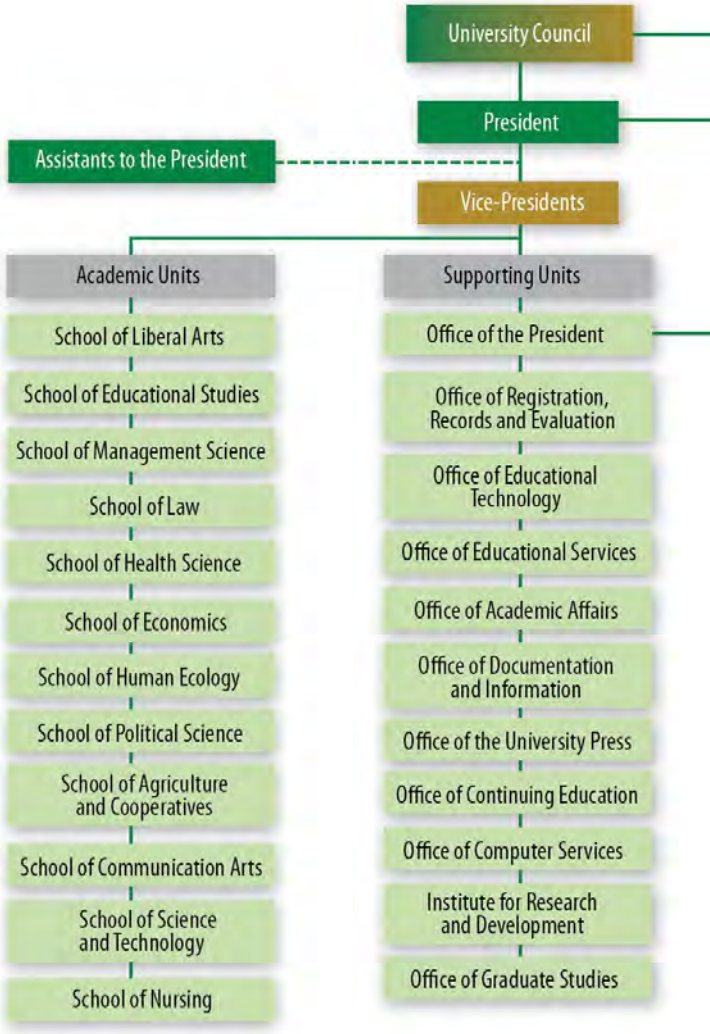
MANAGEMENT SYSTEM

Administrative Structure

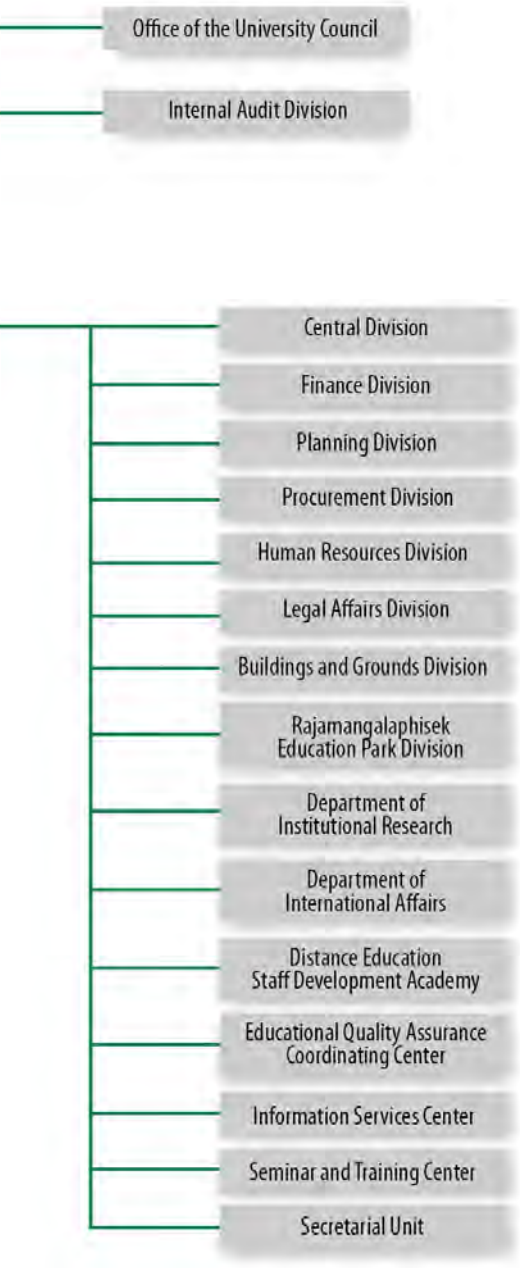
As STOU prioritizes the effectiveness and efficiency of distance education system to achieve the university goals. Therefore, it is important to set up a well-functioning university administrative structure shown in Figure 1.

The University Council is the highest administrative body in STOU and is responsible for the governance, policy making, educational character and mission of the university, the appointment of the President, overseeing all functions of the university and ensuring regulation of the university's finances and resources. The Council also has a crucial academic role as all STOU degree and non-degree programs are awarded under the authority of the Council.
The Academic Senate is under the University Council and responsible for issuing, guiding and making decision on academic policy and planning, educational quality and achievement monitoring, teaching and learning, research ethical regulation, the approval of certificates, degrees, including the curriculum development and abolition. The University President is the Chairman of the Academic Senate.

Figure 1
STOU Organizational Structure
(As of March 2021)



Under the administration structure, STOU has 12 schools and another 11 supported offices as shown in Figure 1. In addition to the main campus which located in Nonthaburi Province, there are another ten Regional Distance Education Centers located in every region throughout the country as indicated in Figure 2. The centers are supposed to be an administrative and learning support to engage all learners in local areas.



Distance Learning System

Teaching and Learning System. STOU employs multi-media distance learning system which is composed of main and supplementary media. From the beginning, STOU focuses on printed-based. The main media are text-books, work-books and study guide while supplementary media are radio programs, television programs, tape records, and tutoring programs. At present with the progress of media and technology, STOU has introduced computer-based distance learning parallel with the printed-based, including E-learning, M-learning, Video on Demand, Video Conferencing, Computer Conferencing, Computer-Based Instructions, Web-Based Instruction, and Face-to-Face Interaction.

Figure 2
Ten Regional Distance Education Centers

In Academic Year 2020, STOU has adjusted the instructional system at the bachelor's degree level to be more relevant to needs of the learners. They cover three selective study plans as follows:

Plan 1 (A1): The learners study by themselves from the main and supplementary media provided by the university and then take the final examination at the end of the semester.

Plan 2 (A2): The learners study by themselves from the main and supplementary media provided by the university. They have to take both mid-term and final examination.

Plan 3 (A3): The learners study by themselves from the main and supplementary media provided by the university. Then they have to participate in blended learning activities and take both mid-term and final examination.

Study programs. The university offers three level of study programs: undergraduate program, graduate program, and non-degree program. For undergraduate program, each of the twelve schools offer various major subjects. For example, Bachelor's Degree in Thai Studies, Information Science, English, Law, Public Health, Thai Traditional Medicine, Business Administration, Public Administration, International Relations, Industrial Technology etc. For graduate program, several fields of studies are made available for Master's

Degree programs and Doctoral Degree programs such as Curriculum and Instruction, Educational Administration, Information Science, and Business Administration etc.

At the non-degree program, the university let the general public enroll each subject in any Bachelor's Degree programs. The period of studying each subject is one semester. Once they finish, they will receive a certificate of achievement or they are able to deposit credits of that subject through the credit bank system and transfer their credits earned into Bachelor's Degree program. The university also extends the educational opportunity to the disable people and the inmates. For the inmates, they can enroll in some Bachelor's Degree and Master's Degree programs. These inmates are able to study through media that the university send to them in the prisons.

Examinations

In an effort to maintain its standard of academic excellence and reduce cost for travelling of the learners, STOU has coordinated with main secondary school of every province to be the examination site of the university. Thus, the learners have examination held for two days on weekends at their own provinces. STOU learners residing abroad are able to take examinations at the local Royal Thai Embassy or Consulate. However, due to the current situation of Covid-19 pandemic, the university has initiated online examinations for learners over Thailand and abroad.

Educational Services System

The university provides several educational service activities in order to help learners learn successfully and prevent them dropping out. The following are the examples of the university's activities.

- STOU provides both prospective and current learners with an opportunity to receive academic and professional guidance and counseling services through various channels. Also, orientations are provided for newly enrolled learners to receive important information and be well-prepared for studying in the distance education system.
- A wide range of student clubs' activities are provided for learners to meet one another, share views and study experiences, and participate in collaborative academic and social activities.
- One-Stop Service Center (OSS) has been designed to provide assistance to learners and the general public easily access for all services and advice through face-to-face interaction and electronic communication.
- Special services for disabled learners. The university provides counseling and guidance, orientation and fund as well as learning materials such as audio textbooks, computers with disability-specific software and hardware, voice recognition and synthesizers, print magnifiers and scanners, text files and other media.

Educational Services for the General Public

STOU has made great progress in bringing lifelong education to Thai people through its educational radio and television programs. Twenty-minute radio programs covering topics in a wide variety of courses are broadcast throughout the country. Many course blocks also have supplementary television programs which last a half hour each and regularly broadcast on public television. Since2012, STOU open of STOU Channel, the university's own C-band television station broadcasting 24 hours a day. Moreover, STOU has offered website as Media on Demand. All of these options are free and available to everyone.

Additionally, a wide range of intensive training programs are organized by the Office of Continuing Education. Public training and in-house training, have been offered to the general public at the STOU headquarter and ten Regional Distance Education Centers so as to develop human resources in different occupations, increase work efficiency, enhance quality of life and implement what they have learned practically.

As the university has improved its support to the learners, libraries at the university headquarter and at 10 Regional Distance Education Centers are the learning resource of the community to provide services for both the learners and the general public. Moreover, STOU Corners have also been established as resource centers in all provincial libraries, offering educational media lending and reference services to learners and the local communities.

DELIVERY SYSTEM AND TECHNOLOGY USE

With the development of the internet and technologies, the changing demands of knowledge and skills continue to challenge formal education systems. Distance learning is becoming a well-accepted and essential part of educational systems. STOU has created various innovations and technologies related to distance learning to ensure equitable access to quality education and lifelong learning opportunities for all.

Online teaching both in the form of e-Learning and m-Learning has continually been developed to conform to learners' behavior in the digital age and realize the importance of using the technology in teaching and learning. The responsive web design approach has been deployed to offer access to learning content easily with the least restriction of the display on the learning devices including laptops, tablets and smart phones as well as to respond to the learners' preferences.

In addition, STOU has faced challenges in the continuously decreasing number of students and the increasing learning opportunities for elderly and working-age population to conform to Thailand's population structure. The notion of the university is to develop an effective and modern teaching and learning management system that has the quality and standards to provide the learners a fun and convenient way of learning. The Sukhothai Thammathirat Open University Reform Committee (2019) has made recommendations for university reform in five aspects as follows:

Teaching and Learning Management

The teaching and learning management are divided into three levels, namely, the undergraduate degree level, the graduate degree level and the non-degree level with details as follows:

Undergraduate Degree Level. The context and learning environment refer to learner environment, physical environment, diverse of culture and learning style, such as self-learning in distance learning, learning characteristics. They could also include the interaction between learners and learning media and also with the instructors and learning management in various ways to facilitate learning. The types of learning environments in distance education system could be classified into the following.

(1) Traditional Self-Learning Environment
STOU has developed a self-learning package based on the open and distance environment. Determining academic content through the main teaching media has enabled to complete the content in the form of publications including teaching materials, learning exercises and supplementary materials. Video programs, radio programs, distance learning supplementary programs, electronic media and some other methods have been adopted in order to facilitate learners' self-learning without going to class.

(2) Virtual Learning Environment
The university has developed self-learning packages based on a virtual learning environment. The information and communication technology tool in education has been implemented on

the learning management platform, which includes the delivery of academic content to the learners in the various types of digital media such as e-Book, e-paper, interaction between learners and teachers, assessment and evaluation through devices. These activities have been used to manage and organize online teaching and learning activities as well as facilitate learners' learning.

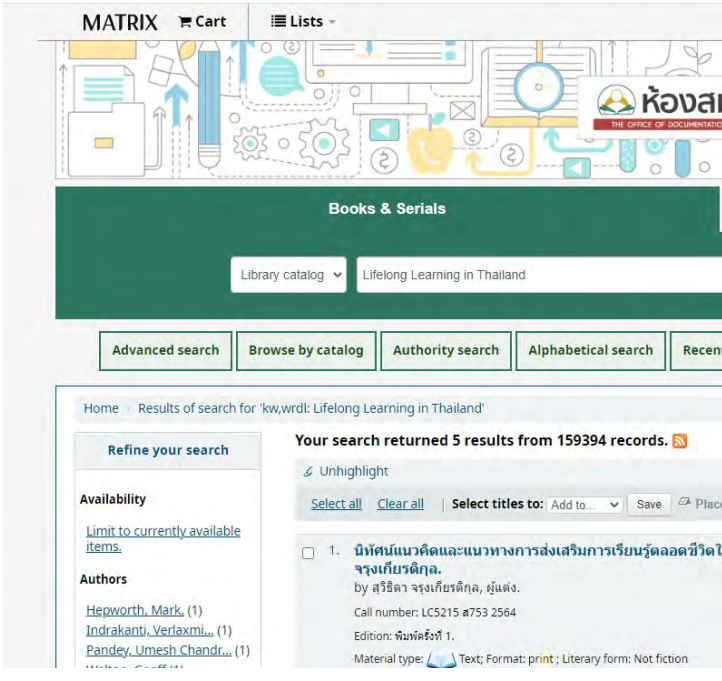
(3) Blended Learning Environment
Blended learning is an approach to education that combines self-learning material with virtual learning. Specifying academic content through various teaching media has been determined to support education of the fourth era and organize the learning activities between instructors and learners at the particular places that fulfill knowledge, skills and good attitudes from self-learning and create a community of learners.

Graduate Degree Level. The learning environment for educational management at graduate level is distance education. Together with the development in technology, effective self-learning materials and blended learning environment enhance learners' self-learning and promote their achievement level. The learning environments are divided into two types as follows.

(1) Specifying the main content in the form of main media along with learning activities in the form of supplementary seminars, intensive seminars, as specified in each course set has been adopted to develop self-learning materials and collaborative learning activities.

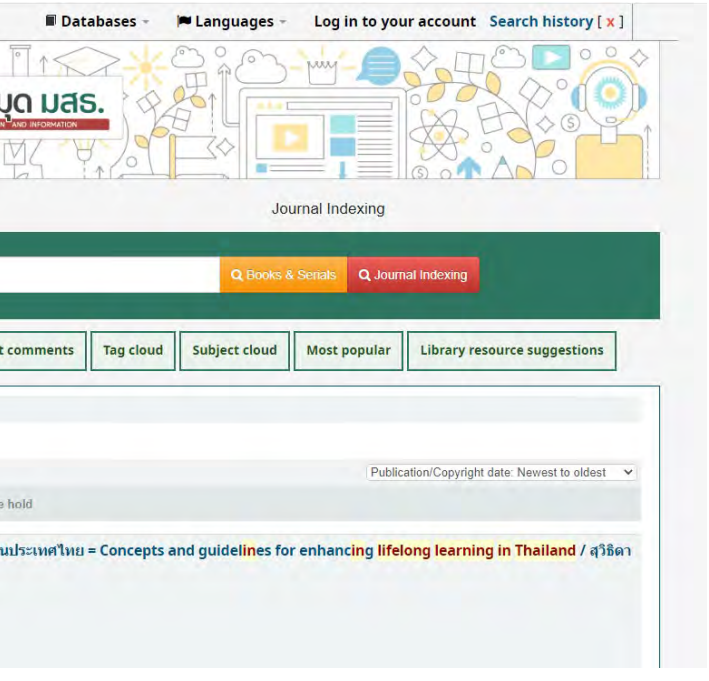
(2) Using information and communication technology tools on virtual environments has been used to develop self-learning materials. STOU has managed and organized online teaching and learning activities on the learning management platform for the delivery of academic content and interaction between learners and instructors, evaluation as well as providing services that facilitate the learning.

Non-Degree Level. The non-degree programs are designed to closely match with learning and career-goals of the learners in the form of a module for distance learning to enhance their skills and knowledge according to their learning goals. STOU has offered non-degree courses to the general public regardless of age or educational background. The credits could also be transferred to the program of study at undergraduate degree



level to motivate the learners to achieve their learning and earn degrees.

Teaching and learning management of non-degree teaching and learning program is similar to undergraduate degree level. STOU has developed a self-learning material based on an open environment, a virtual learning environment and a blended learning environment. Determining academic content through the main teaching media has enabled to complete the content in the form of publications including teaching materials, learning exercises and supplementary materials. In order to facilitate learners' self-learning, video programs, radio programs, distance learning supplementary programs and digital media are provided. STOU has adhered to the principles of learning media that learners are able to learn by themselves through the university's distance education system. Consequently, the concepts of main media and supplementary materials are adjusted to move along the new fast growing educational technology and communication.



Referring to the concept of learning resources, designing of educational technology used as new media still focuses on instructional systems design for learners to study in an informal education via e-learning, emphasizing on interactive learning design, permitting learners to access learning resources in real time, anytime, anywhere through all learning devices in appearance as Ubiquitous Learning. The evolution of learning media platforms into an online based programs can be more easily accessed due to the changing behaviors of today's learners and the internet network, for example, using mobile devices to share and access information and learning contents as well as developing educational radio programs to the format of Podcast programs or online radio programs via streaming which are recorded and distributed on the internet.

Teaching and Learning Activities

STOU offers a large selection of offline teaching and learning activities through print-based approach without using technology in the interaction, as traditional approach designed to support learners. For example, textbooks, workbooks, other course documents and F2F learning activity such as seminars, intensive seminars, practice sessions, skills enhancement and collaborative learning activities.

Due to the constantly evolving technological world and increasing importance of Information and Communications Technology

(ICT), STOU has realized the importance of seeking more innovative teaching models as well as implementing new media not only to supplement, but to transform and improve the learning process. Online teaching and learning activities using ICT are offered to a variety group of learners for degree and non-degree programs. SPOC (Small Private Online Course) is a teaching and learning model for a small group learners based on Moodle whereas MOOCs (Massive open online course) are online courses with video content for a large number of learners based on edX platform.

Media/Learning Support Resource

STOU utilizes learning support resources delivered to learners to engage in their learning activities according to main and supplementary media such as textbooks, workbooks, study guides in print-based and computer-based (e-book and e-paper), video clips and audio clips. Moreover, there are various external media resources in different learning support sources, such as libraries, databases, websites, social media and open educational resources published on the internet.

Communication and Distribution Channels

Since the communication and distribution channels of the university have been continuously modified to cope with the needs of learners, STOU Channel, the university's own C-band television station broadcasting 24 hours a day, has enabled learners to have equitable access to various programs through DLTV14 (Klai Kangwon) such as YouTube, Facebook and social media, and using e-Leaning to access more supplementary media.

Teaching and Learning Support

The university is committed to supporting both lecturers and learners in creating media in a variety of forms. Continuous improvement of the digital studio production enables the university to produce supplementary media and to create comprehensive University's TV and radio programs with digital media cloud archives services. Moreover, in response to the COVID-19 pandemic, STOU uses Microsoft Teams for education alongside Learning Management System (LMS) integration into Moodle to facilitate distance learning. This integration helps lecturers collaborate around Moodle courses within Teams, compensates for face-to-face learning and increases interaction between learners and lecturers through online platform. In addition, Microsoft Teams are used for course-team meeting in university in order to avoid on-site teaching and learning as well as to have measures to maintain social distancing.

Besides, using artificial intelligence technology leads to the opportunity to improve the learning processes. Guidelines on the use of AI in education issued by STOU School of Science and Technology, provide information services about distance education systems by classified groups of people such as public, current learners, and alumni as well as information and communication services such as application, programs, registrations, learning activities, and examinations by using learner web portal (Samark Chaisanguan and Walisa Romsaiyud, 2017).

MOOCs AND OTHER OPEN EDUCATION PRACTICES

Massive Open Online Courses (MOOCs) are online courses that provide an affordable and flexible way to learn new skills, enhance your career and offer quality educational experiences. STOU-MOOC is the cooperation between the Thai Cyber University (TCU), the Office of the Higher Education Commission (OHEC) and STOU to expand learning opportunities to learners. Therefore, MOOCs are more proper to the needs of learners in a digital age.

So as to avail the learners of adequate and effective learning resources, STOU has been involved in the development of thirty-six courses which include twenty courses related to subjects taught by STOU Schools through the Open edX platform in Stages 1 and 2, which is a free and open source learning platform to host MOOCs, smaller classes and training modules, and sixteen courses related to community promotion and development under the operation of the Center for Knowledge Management, Communication and Development (CCDKM).

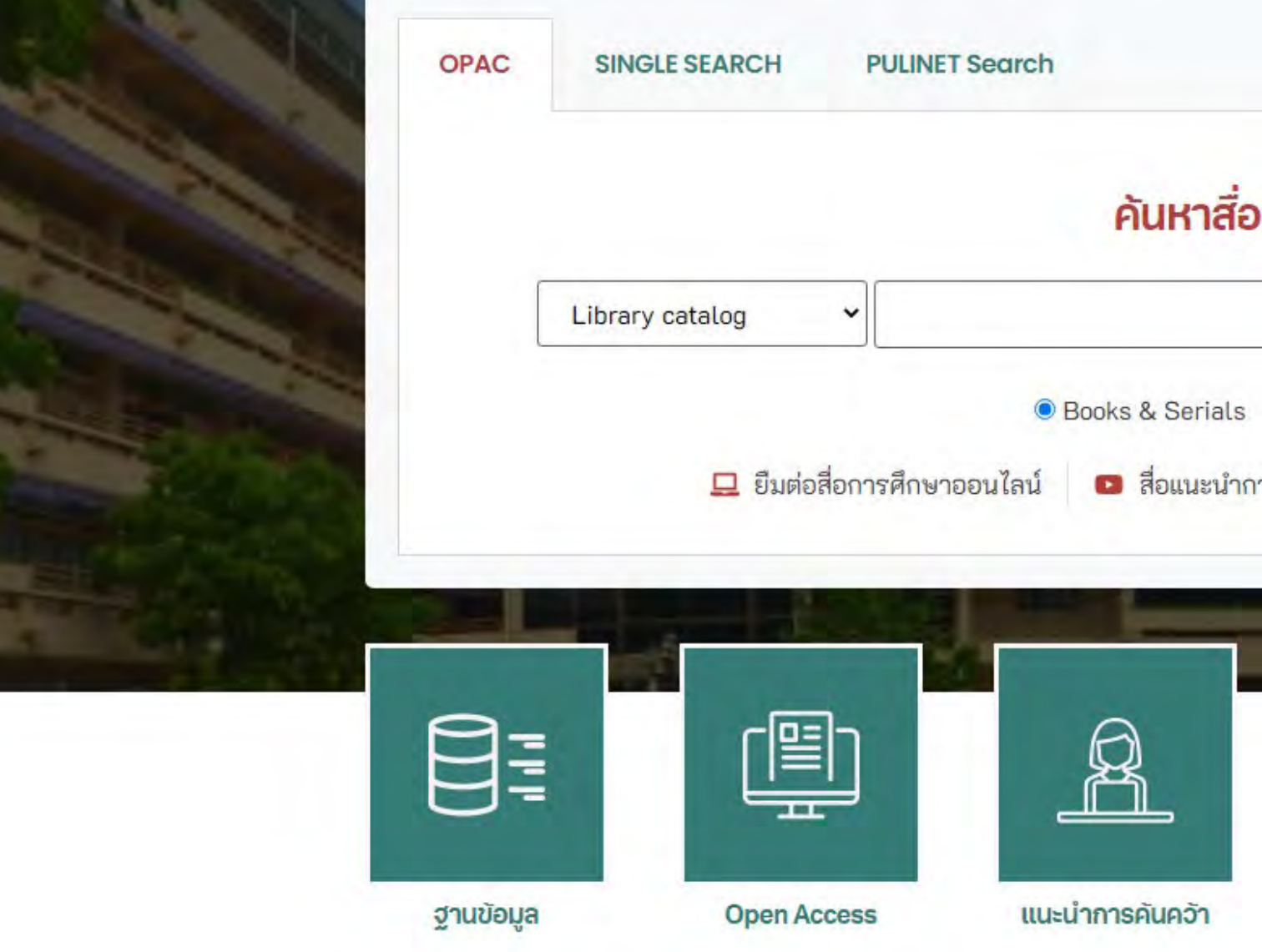
In addition to STOU-MOOC, open learning resources of the university are accessed through media.stou.ac.th, which presented portal of STOU media offered through 12 Schools of study. STOU learners are able to access media through every platform, including FM Sukhothai, E-Tutorials through STOU Channel and the teaching video clips in moodle.stou.ac.th. However, general public could watch and listen to educational media through STOU Channel, university television channel, and FM Sukhothai, university radio station, so as to give the opportunity for anyone to access the reliable learning resources and references.

RESEARCH FINDINGS IN 2015-2019

Similar to traditional universities, STOU has determined that research is one of the four key functions of the university. The Institute of Research and Development (IRD) has been established since 1992 with the mission to conduct research focusing on distance education which reflects the identity of STOU and creates quality education in distance education context of STOU at national and international levels. Later, other research areas beyond distance education have also been supported and recognized.

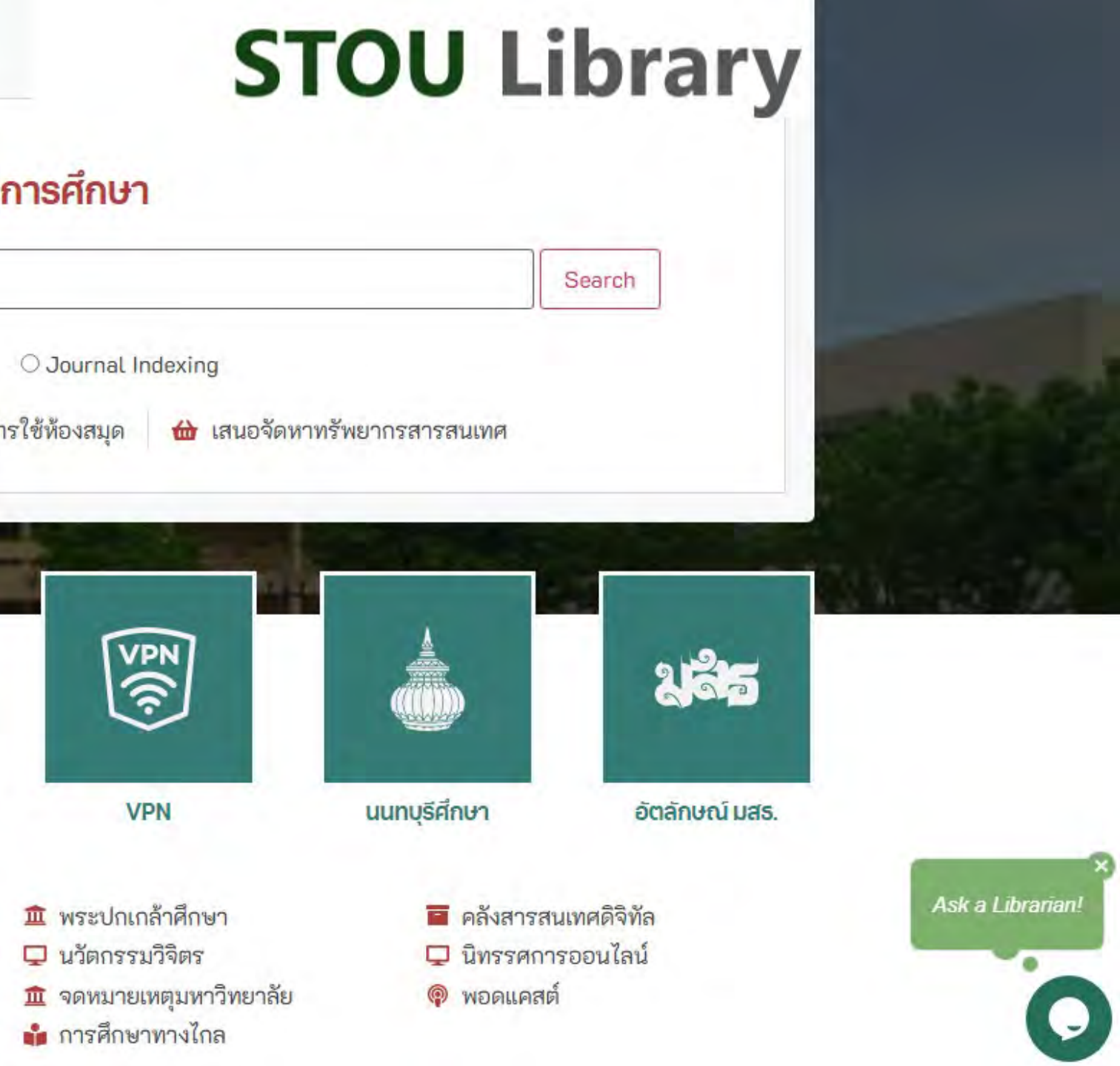
STOU has allocated about 20 million Thai Baht annually to offer research opportunity for STOU faculty and staff. From 2009 to 2019, that the largest numbers of research projects (1,522 projects) received funding from external agents and produced the largest amount of funding (1,722.44 million Baht). The second highest number of research projects are from the Rattanakosin Bicentennial Fund for academic research which was established as part of the Rattanakosin Bicentennial celebration (217 projects with 26.7 million Baht granted).

In terms of research productivities in the last five years, there is a large number of completed research projects from 2015 to 2019. These numbers show a tremendous number of research in education in various aspects that reflect the identity of STOU research. It is not surprised that the largest number of research projects



granted by STOU funding is the research in the development of distance education instruction, followed by distance training, educational media & technology, curriculum evaluation, educational assessment, research support and evaluation, student service, human resource, student dropout, and the development of registration.

The following section provides the succinct review of the aforementioned ten research areas carried out by STOU researchers in the last five years in order to provide readers insight regarding specific research that have been conducted.



Instructions

Instructional design is a key component of teaching and learning in the context of distance education of STOU. Designing a sound teaching approach will have positive consequences on student learning. STOU has invested on the development of instruction strategies through research. The major findings of such research are new knowledge and understanding about course contents and materials, processes, delivery methods, as well as teaching strategies for STOU. For example, there are research on the development of intelligent online distance learning model, a collaborative research among OU5 universities on online instruction

development, an advanced programing instructional model, the development of information, media and digital literacy in distance higher education, and a benchmarking research project exploring comparative higher education policy.

Distance Training

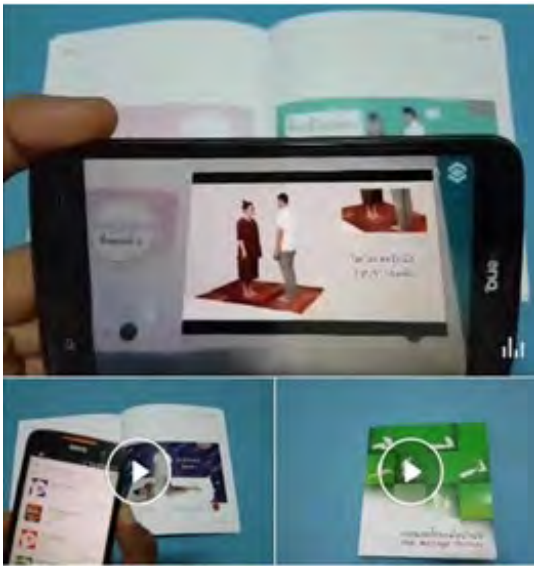
Research and development in distance training at STOU were funded with regard to responding to one of STOU research missions which is the provision of STOU services to communities. Nearly all services produced by this type of research were related to the provision of learning and training provided to Thai people throughout the country through various distance education formats. Examples of research and development in this category include a web-based instruction for strengthening leadership of school administrators, the distance training on assessing preschool students' development and learning, a virtual library, and intelligent books for hearing impaired students.

Educational Media and Technology

Educational media and technology play important roles in creating viable learning and instruction in distance education that support student learning through personalized learning approaches achieved by the advancement of educational technology. Therefore, STOU has allocated significant funding to conduct research and development in this area. Also the distance media fund produces educational media and technological tools created by STOU researchers to support teaching and learning at STOU. Examples of research and development in this area include the blended educational media, designing sound media production, e-book teaching development, and virtual classroom model.

Curriculum Evaluation

Curriculum implementation is the process of transferring contents in terms of knowledge and skills to students. Evaluating effectiveness and limitations of curriculum



implementation of higher education institutes has been required by the Ministry of Higher Education. . Given the significance of curriculum evaluation, STOU has provided research funding to faculty members to assess the effectiveness of curriculum. There is numerous research conducted at different educational levels to assess quality of teaching and curriculum. There are survey research exploring satisfaction of different stakeholders such as graduate users concerning quality of students graduating from STOU. Also, there is a number of research conducted to assess the feasibility of new curriculum.

Educational Assessment

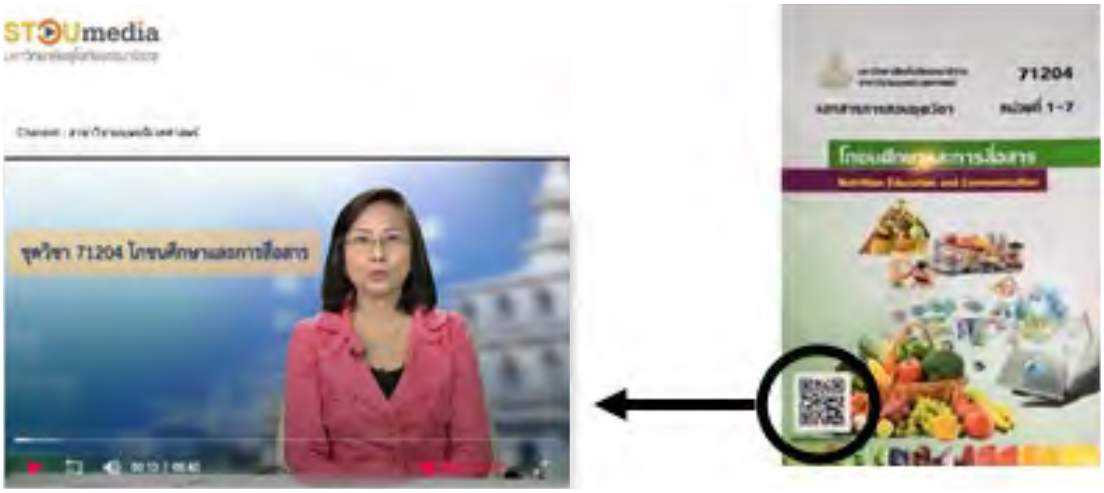
Educational assessment is a part of instruction and is used to collect data regarding student learning which is important to provide evidence of instructional success. The uses of appropriate educational assessment will not only help student learns but also support STOU missions regarding the provision of quality distance education. Because of the importance of educational assessment, some research projects were granted to develop educational assessment methods for distance education that could provide valid and reliable assessment results. Examples of this research in this area include the cooperative research among OU5 universities in models and challenging in educational measurement and evaluation in open education, a comparative study on educational measurement and evaluation in AAOU, student grading guidelines, the development of STOU quality assurance indicators, the digital literacy assessment of STOU students and faculty members, and the development of English proficiency assessment administration (STOU-EPT).

Research Support and Evaluation

There are a number of research in research support and evaluation that was conducted by IRD researchers. Some research in this research category is survey research carried out to explore STOU researchers' needs so as to provide supports that meet their needs. Moreover, there are some research projects that evaluate the effectiveness of STOU research activities such as granting process, guidelines on the promotion of distance education research, and the development of research funding.

Student Service

Students entering STOU's educational programs are diverse in demographic background and qualification and hence they have different preferences and needs. Therefore, student services are important and should be designed such that their needs and preferences are fulfilled. There are some research projects conducted to develop effective student services to STOU students. Examples of research in this area include the development of electronic student support system, the development of successful student service model in distance education, the guidelines on quality of graduate development, student communication model, and the cooperative research among OU5 universities in educational services that support successful learning in distance education.



Human Resources

There is research on development of manpower at STOU. For example, there are research on planning STOU human resources and the STOU staff psychological training aimed at enhancing their organizational values.

Student Dropout

Due to a large number of students who could not complete their study in distance learning of STOU, there are some research projects funded by IRD to find answers to the questions such as why students could not finish their study and what are solutions to student dropout. Examples of research in this category include the investigation of factors influencing STOU student retention, and factors affecting student dropout.

Registration

With regard to the development of appropriate registration system, there is a research project that was funded to examine and develop the STOU registration system.

In addition to encouraging and supporting the lecturers to conduct research, STOU supports its instructors to cooperate with researchers of other institutions both within the country and abroad. Cooperative research projects have enabled researchers to learn and gain experiences in doing research, sharing research results and applying the best practice from each institution to benefit their own institution. Carrying out research can be of great benefits not only for researchers, but also for universities in creating a good cooperation and the spirit of helping each other among these universities. Moreover, research topics on new pedagogical knowledge, advanced educational technology, and models to create or deliver effective education to learners are highlighted for future research and expected research outcomes in responding to the country strategy.

SUMMARY

The provision of distance education system by STOU throughout the previous forty-two years puts emphasis on development of the distance education system management that facilitates and enables the learners to learn by themselves anytime and anywhere according to their needs, with the use of information and communication technology and educational management procedure emphasizing the development of learner's quality based on the national and international standards. The most important thing that STOU has always adhered and will continue to adhere in the future is the being a higher education institution in the open system that adheres to the principle of lifelong education, producing quality graduates to serve the society, and being a part of the development of people to be good citizens of Thailand at present and in the future.

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The Open University of China (OUC)

04

04

Towards Lifelong Learning for All: Development of Open and Distance Education in China

Institute of Lifelong Education and International Department

The Open University of China

ESTABLISHMENT

Open and distance education (ODE) has become the foundation on which the international community can realize lifelong education, lifelong learning, and a learning society. A review and summary of its history and status in China, a major country in ODE, is conducive to enhancing the world's understanding about China's ODE and will contribute for inspirations to other countries.

Open and distance education in China goes back to ancient times. As early as 2,500 years ago, the great Chinese thinker Confucius put forward the concept of "education for all without discrimination," advocating that all members of society who are ready to learn should have access to educational opportunities. This concept has had a profound influence on the development of education in China for more than 2,000 years. As a result, educational target groups expanded and became larger in number, making mass education one of the main distinctions of Chinese education in ancient history (Zhang, 2021).

In 2017, the OUC was honored with the Institutional Prize of Excellence by the International Council for Open and Distance Education (ICDE). As of the end of 2021, all the 44 provincial RTVUs changed their names to open universities.

In the 20th century, correspondence-based distance education began to be more widespread. In March 1915, Shanghai Commercial Press officially founded the first Chinese-run correspondence school, which was the prelude to distance education in contemporary China. By 1917, there were over 50 correspondence schools founded by publishing houses in China. According to statistics from 1915 to1946, students admitted by three major correspondence schools owned by China Commercial Press, Zhonghua Book Company, and Kaiming Book Company, came from 22 provinces and five municipalities. As many as 60,000 foreign language professionals (Ding, 2015) were cultivated for industrial, business, academic, and political circles in the Republic of China. A new off-campus way of learning was opened up for people from lower level of society to receive systematic education and to get new skills, which fostered a host of talents for China's economic and social development during this period. Generally speaking, the development of open and distance education in China was still in its infancy and preparation stage in the first half of the 20th century (Ding Xingfu, 2001).

PLANNING AND DEVELOPMENT IN CHINA

Development History of ODE in China

Since the founding the People's Republic of China (PRC) in 1949, ODE in China has taken on a new look and embarked on a road to development. For more than 70 years, it has been in step with and interacted with the development of the PRC, with a number of clearly delineated stages. The 70-year development history of open and distance education in China can be divided into four stages.

- **Initial stage of ODE in China (1949-1977).** In face of a situation of extreme shortage of talented professionals just after the founding of the PRC, in 1951, the Ministry of Education (MoE) issued a regulation which stated that "correspondence

education is an important part of regular higher education" (Lin, 2018). By 1965, there were 123 universities offering correspondence education, offering as many as 138 majors that attracted 1.89 million registered students. By 1965, regular institutions of higher learning throughout China cultivated 80,000 graduates of correspondence education, accounting for 28% of the total enrollment in higher education (Ding, 2001).

After 1960, some big cities started to run city TV universities with the help of TV networks. Beijing TV University was established first, after which Shanghai, Guangzhou, and Shenyang quickly followed suit. These universities were dedicated to serving on-the-job part-time learning for adults. They also extended education services to urban labors and made great contributions to local economic construction.

After 1966, the development of both correspondence education and TV universities were plunged into 10 years of stagnation.

- **The Reconstruction of ODE After the Reform and Opening-up (1978-1998).** After the reform and opening up, economic development became the central task. In order to realize the leapfrog development of higher education under the conditions of China's limited financial capacity, the Chinese government decided on the higher education development policy of "walking on two legs" to vigorously develop adult education while stepping up efforts to develop regular higher education.

Firstly, the development of radio and TV universities (RTVUs) were advocated vigorously. Under Mr. Deng Xiaoping's advocacy, and with the powerful support of top-down design, top-down promotion, and the whole state system, 28 RTVUs were launched on 6 February 1979, with the first opening ceremony held in Beijing. Radio and TV satellite education became a major part of the development of distance education in China. By 1985, RTVUs in China had developed into a national distance education system consisting of one central RTVU and 35 provincial RTVUs, with grassroots classes covering both urban and rural China. A

total of 22 majors were offered in the fields of science and technology, arts, economics, politics, and law. A total of 1.65 million students had been enrolled and 810,000 of them graduated. Annual degree education graduates accounted for an average of 17 percent of the national total.

Secondly, correspondence education was reconstructed. In September 1980, the State Council endorsed the opinions submitted by the MoE with instructions supporting the restoration and reconstruction of correspondence education, i.e., *Opinions on Vigorously Developing Correspondence Education in Universities and Evening Universities.* In February 1987, the National Education Commission issued the first regulatory document for China's higher correspondence education, *Interim Regulations on Correspondence Education in Regular Institutions of Higher Learning,* laying a foundation for systematic, standardized, and institutional operation and the development of higher correspondence education. By 1998, there were 635 regular institutions of higher learning and four independent correspondence colleges offering higher correspondence education to around 896,000 registered students (Ding, 2000).

After 20 years of development, Radio and TV education and correspondence education became important parts of China's higher education cause. By 1998, 2.4 million junior college and undergraduate students were cultivated via correspondence education offered by regular institutions of higher learning and four independent correspondence colleges, with almost 2.5 million graduates from RTVUs across China. Graduates of both of these types of education accounted for 64% of graduates from regular institutions of higher learning, and 74.4% of graduates in adult education in China.1

- **Strategic Innovation Oriented to The Information Era (1999-2009).** At the beginning of the 21st century, to building a lifelong education system and driving the construction of a learning society, the Chinese government decided to implement a modern distance education program to boost the reform and innovation of RTVUs and regular institutions of higher learning, and to develop open online education supported by two-way interactive satellite TV and computer network technology. In January 1999, the State Council endorsed the *Ministry of Education's Action Plan for Education Rejuvenation for the 21st Century* (hereinafter referred to as "action plan") formulated in December 1998, which clearly stated the need to "implement a modern distance education project, to form an open education network, and to build a lifelong learning system."

  A practical pilot scheme was adopted to implement the modern distance education project. From 1999 to 2003, the Ministry of Education had given

its approval for 68 regular institutions of higher learning and CCRTVU (now renamed the Open University) to participate in the modern distance education pilot project. As a result, two parallel pilot development systems were established in China's ODE. One was for regular institutions of higher learning, and the other was for the RTVU system.

With the implementation of the modern distance education project, a new ODE system made up of the RTVU system, the online education system of regular institutions of higher learning, and the correspondence education system took shape. By 2009, a total of 5.0813 million students graduated from junior college and undergraduate programs via the open education pilot project advanced in the RTVU system, 4.896 million graduates had been trained via online education implemented by regular institutions of higher learning, and 6.4871 million graduates had been trained via correspondence education.

- **Reform and Innovation in the New Era (Since 2010).** In the new era, the Chinese government has accurately grasped the global trends in science, technology, and education, and prioritized the advantages of information technology to promote the construction of open universities as one of the major projects of national education reform and development. In October 2010, the General Office of the State Council issued the *Circular on the Pilot Implementation of National Education System Reform* and made clear the need to explore the construction model of open universities. It also stated that the former China Central Radio and TV University and the local open universities of Beijing, Shanghai, Jiangsu, Guangdong, and Yunnan would be pilot units for reform.The main value orientation of the pilot project is to promote the transformation of RTVUs into a new institution of higher learning that mainly provides open education for adults, to accelerate the development of a more open and flexible education system oriented towards and suitable for everyone, and to build a learning society where "anyone can learn at anytime, and anywhere." In order to implement this national strategic arrangement, the Open University of China (OUC) was officially established on the basis of the former CCRTVU, and the RTVUs of Beijing, Shanghai, Jiangsu, Guangdong, and Yunnan were renamed as open universities in 2012.

Over the past 10 years, the OUC and the five local open universities have worked hard to explore the construction of a new type of university and have made initial achievements in keeping up with the rapid development of "Internet +." Take the OUC as an example. The OUC has made major progress in shaping the "internet + University" model, establishing the "simultaneous development of degree and non-degree education" service model, innovating a talent formation model based on modern information technology, building a credit bank system, and exploring an

international development model (Yang, 2019). In 2017, the OUC was honored with the Institutional Prize of Excellence by the International Council for Open and Distance Education (ICDE). As of the end of 2021, all the 44 provincial RTVUs changed their names to open universities.

During this period, online education in China's regular institutions of higher learning also experienced fast development. Regular institutions of higher learning have played a leading and demonstrative role in exploring the construction and development of massive open online courses (MOOC), promoting the establishment of regional MOOC alliances, and participating in the construction of "outstanding national online open courses."

Development Plan for ODE in China

In the new era, China is accelerating education modernisation. In 2019, the CPC Central Committee and the State Council issued *China Education Modernisation 2035*, outlining a grand blueprint for educational development in China, "to realise overall education modernization and to strive to become an education power." "Accelerating educational change in the information era, promoting the change and innovation of education organization forms and management modes, and using informatisation to advance education modernization" is one of the 10 major strategic tasks. In recent years, efforts have been stepped up to strengthen strategic planning and resource coordination and strive to develop ODE with Chinese characteristics. The overall national policies and the strategic adjustment of the OUC can thus be taken as examples to introduce the development plan for ODE in China.

- **Promote the Transformation and Upgrading of Education Informatisation.** In order to meet the needs of education reform and development in the information era, relevant departments of the Chinese government formulated documentation such as *Education Informatisation during the Period of "the Thirteenth Five-Year" Plan (2016)* and the *Education Informatisation 2.0 Action Plan (2018).* Key tasks have been strategically deployed and the future development trends of education informatisation have been outlined. These documents focused on exploring new teaching models based on information technology, developing new internet-based education service models, and exploring new models of education governance in the information era with the goal of realising a three-fold transformation. The first is to move from the development, application, and service of education-specific resources to the development, application, and service of general resources. The second is to move from improving the application capacity of information technology to improving the information literacy of teachers and students. The third is to move from integrated development to the innovative development of education informatisation (Lei, 2018).

  In order to further implement *Education Informatisation during the Period of "the Thirteenth Five-Year" Plan* and the *Education Informatisation 2.0 Action Plan,* the Ministry of Education issued *Key Points of Education Informatisation and Network Security in 2019,* mapping out the major tasks in the future work from 10 different perspectives. These documents offered fundamental guidance to promote the transformation and upgrading of education informatisation in China, and also provided a guide for the related practice and theoretical study of distance higher education in China. In March 2021, the Ministry of Education issued *The Circular on Strengthening the Informatisation of Educational Management in the New Era.* It is proposed to "use the new generation of information technology to improve the level of digitalization, networking and intelligence of educational management, and to support the modernization of educational governance system and governance ability with informationisation". In July 2021, the Ministry of Education, together with other six governmental departments, issued *The Guidance on Promoting the Construction of New Educational Infrastructure to Building a High-quality Education Support System,* requiring to speed up the construction of new educational infrastructure with new development concepts and with informationisation as the core. By 2025, a new educational infrastructure system with optimized structure, intensive efficiency, safety and reliability will be basically formed, providing a digital base for the development of high-quality education. This series of programmatic documents provide theoretical and practical guidance for the transformation and development of open and distance education in China, and also provide the focus for the work ahead.

- **Promote the Healthy Development of Online Education.** The development of online education is conducive to building a networked, digital, personalised lifelong education system. In January 2014, the State Council revoked the right of education administrative authorities to examine and approve online education, allowing institutions of higher learning with adequate conditions and qualifications to offer degree continuing education over the internet. In September 2019, with the approval of the State Council, 11 departments including the Ministry of Education jointly issued *Guiding Opinions on Promoting the Healthy Development of Online Education,* which proposed the promotion of the healthy development of online education by adhering to the basic principles of "people-centred cultivation," "reform and innovation," "fusion and integration," and "multi-entity governance." By 2022, modern information technology will have been further integrated into education, the quality of online education will have been enhanced, a resource and service standard system will have been established, the development environment will have been improved, and the governance system will have been completed. As a result, a networked, digital, personalised lifelong education system will have taken shape and major progress will have been made in the construction of a learning society.

- **Promote the Transformational Development of Open Universities.** Upon entering the new era, the Chinese government paid great attention to improving open universities and boosting the construction of a learning society. In January 2016, the Ministry of Education issued *Opinions on Successfully Running Open Universities.* In August 2020, the Ministry of Education reviewed and passed the OUC Comprehensive Reform Plan to strengthen the OUC educational system. China will take effective measures to provide the OUC with more educational support by enhancing organizational leadership, improving policy systems, improving fund input mechanisms, and strengthening communication and guidance. Efforts will be made to promote the OUC to realise its predetermined development goal in 2025 by reforming and optimising the systems and mechanisms of open education. The OUC will become a major platform for lifelong education in China, a major platform for online education, a platform for flexible education and foreign cooperation, a prominent force serving lifelong education for all, and a powerful bolster to a highly-skilled society.

- **Standardize the Establishment of Majors for Higher Degree Continuing Education**. During the long-term development process of open and distance education in China, a diversified pattern of higher degree continuing education jointly run by multiple entities has emerged. These entities include

regular institutions of higher learning, open universities, higher vocational schools, and independent colleges and universities for adults. This means that there are different specifications for majors, which has a negative impact on the quality of talent cultivation and the educational reputation of institutions of higher learning. In 2016, the Ministry of Education formulated and promulgated *Administrative Measures for the Specialty Setup of Higher Degree Continuing Education.* The purpose of this document is to streamline administration and delegate power to the lower levels, to standardise the management of and administrative policies for establishing majors in higher degree continuing education, to define the responsibilities and procedures, and to strengthen process supervision and information service. In line with these administrative measures, starting from 2018, regular institutions of higher learning no longer offer degree continuing education beyond their full-time education specialties, and regular undergraduate institutions of higher learning who do not offer junior college education no longer offer junior college degree continuing education.

- **Promote High Quality Development of Online Education in Modern Distance Education of Pilot Institutions of Higher Learning**. Since the Chinese government started the modern distance education pilot project in 1999, online higher degree education in regular institutions of higher learning has experienced rapid development. However, there are still some problems affecting the talent cultivation quality of online education. In December 2019, the General Office of the Ministry of Education issued the *Circular on Relevant Tasks to Serve Lifelong Learning for All and Promote the Quality Development of Online Education in Modern Distance Education of Pilot Institutions of Higher Education.* It aims to enhance the supervision of educational institutions to urge them to improve quality and reduce quantity, to standardise operation, and to improve the quality of talent cultivation by establishing administrative rules for the entire process from enrolment to cultivation to completion.

- **Promote the Penetration and Integration of "Internet +" Into Education at All Levels and of All Types.** In order to implement "building an education system that serves lifelong learning for all people", relevant state departments have issued a series of programmatic documents on the development of education and training at all levels and of various types through precise planning and careful deliberation, such as "On the Implementation of IT Capacity Building Project (Phase 2.0) for Teachers from China Primary and Secondary Schools " [2019], "On Promoting the Development of the Service for the Elderly", "Opinions on the Targeted Poverty Alleviation Work in the New Era for Universities Directly Affiliated to MoE ", "the Reform Plan for China's Vocational Education(2019-2021)", " On Improving

Vocational Education for Retired Soldiers in an All-round Way"," Notice on Further Improving Recruitment, Training and Management of Retired Military Soldiers in Higher Vocational Colleges "(2020), Notice on Printing and Distributing Action Plan to Improve the Quality of Vocational Education (2020-2023) (2020), etc. The above policies aim at relying on modern information technology to speed up the integration with various forms of education, so as to expand the scope that education can cover, create a ubiquitous learning environment, and innovate the education and teaching model. The formulation of these policies has expanded the space of development for distance education institutions, and will force distance education institutions to speed up the pace of innovation and development to adapt to the diversified development trend of "Internet + education".

MANAGEMENT SYSTEM IN CHINA ODE

At present, there are two main kinds of institutions of higher learning engaged in open and distance education. One is the open university system dedicated to open and distance education, whose predecessor was the national radio and TV university system that came into being after 1978. The other is regular institutions of higher learning that offer open and distance education. This section of the paper focuses on the introduction of an organization and management system and operation mechanism for the open university system and regular institutions of higher learning engaged in open and distance education.

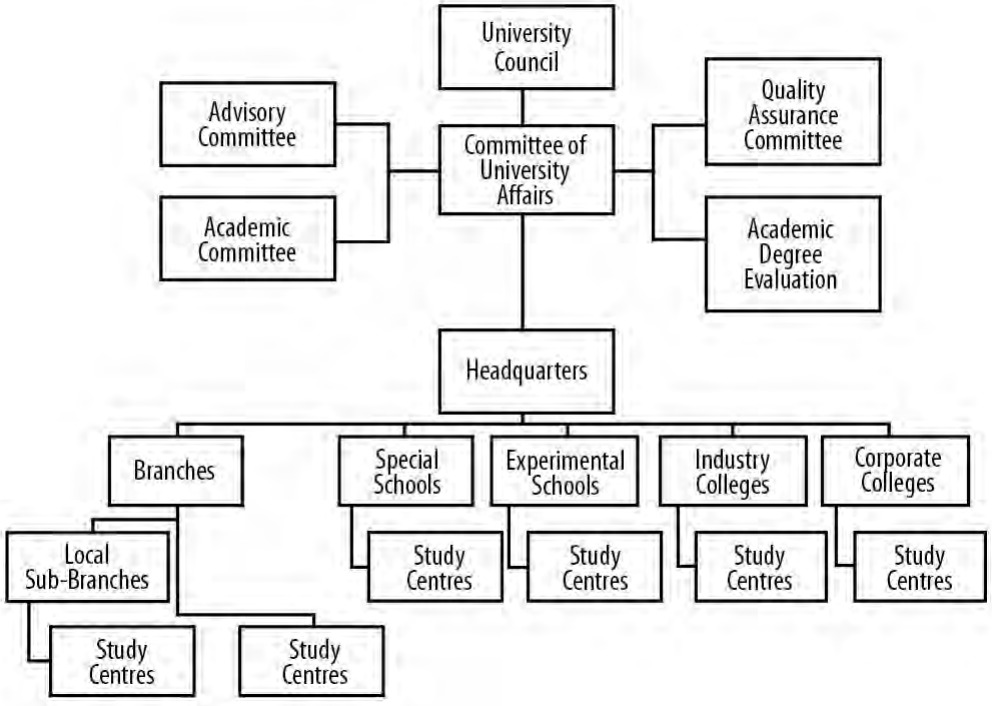
The Open University System

Prior to 2010, the main educational institutions engaged in open and distance education in China were from the national RTVU system developed after 1978. In order to put into effect the guiding principles of relevant documents, the Ministry of Education gave approval for the CCRTVU and five local RTVUs to rename themselves "open universities" in 2012, forming a system which consists of the OUC and the five local open universities in Beijing, Shanghai, Jiangsu, Guangdong, and Yunnan. Until the end of 2021, all the 44 provincial RTVUs in the Open University System changed their names to open universities. The following section introduces the organization and management of the OUC.

OUC Organizational Structure

The OUC is a new style of university established on the basis of China Central Radio and TV University (CCRTVU) and some local RTVUs with an educational network covering all urban and rural areas across China. It is directly led and managed by the Ministry of Education. The OUC's organizational system is made up of the headquarters, regional branches, local schools, and study centres on the basis of voluntary, equal, win-win cooperation (see Figure 1).

Figure 1
The OUC Educational Organization System

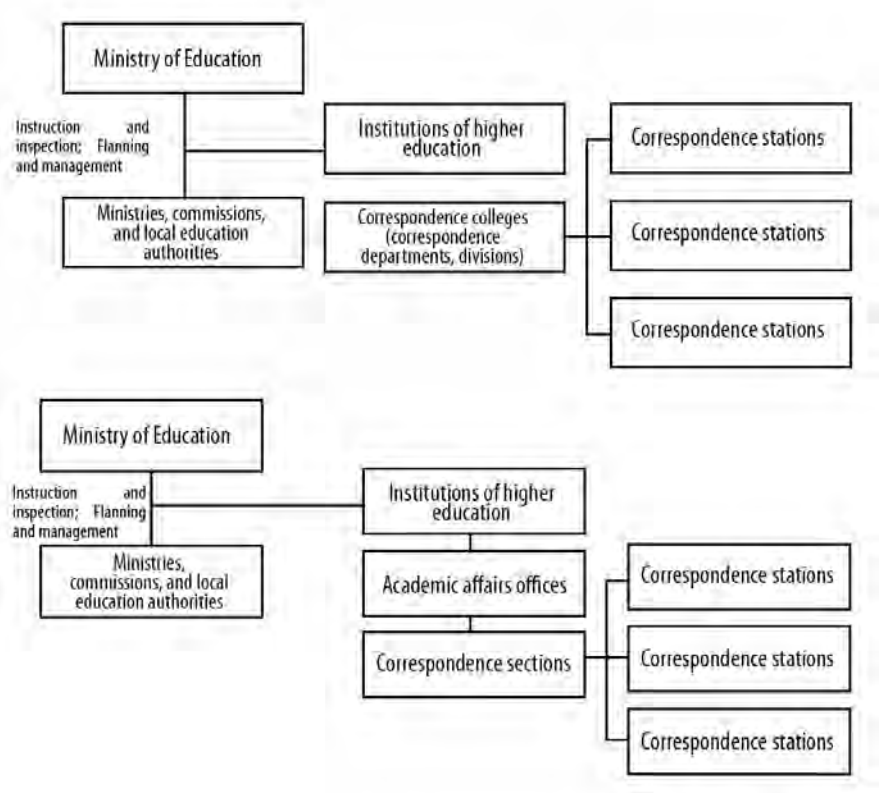


- **Management System and Operation Mechanism.** The OUC's management follows the same system of "overall planning, classified operation, and management" that was put forward during the period of radio and television universities. The OUC headquarters are led and managed by the Ministry of Education. The branches are subordinate to the leadership of responsible education authorities at the same levels, mainly relying on local RTVUs (schools and study centres) for administrative support (e.g. human resources, financial support, and infrastructure projects). They accept the guidance of higher-level open universities in terms of teaching and teaching management.
- **Regular institutions of higher learning.** After the founding of the PRC, regular institutions of higher learning became the first distance education entities engaged in the business of correspondence education. After 1999, there were 68 regular institutions of higher learning involved in independent online degree education thanks to the implementation of "Modern Distance Education Project". This section focuses on the introduction of an organization and management system and operation mechanism for correspondence education and online education run by regular institutions of higher learning.

- **Organization and Management System for Correspondence Education.** In China, there are two main types of correspondence education. One is independent institutions of correspondence education approved by the educational administrative authorities. Such institutions are small in number and have little influence. In 1986, there were seven such institutions, but this number dropped to two in 2002. The other type is correspondence colleges or departments set up by institutions of higher learning, which are a major provider of correspondence education in China. The following section introduces the organizational management and operation mechanism of correspondence education in regular institutions of higher learning.

- **Organizational Structure.** In the past, a large number of regular institutions of higher learning in China were engaged in correspondence education, reaching a height of 635 in 1998. Two organizational forms of correspondence education gradually came into being based on the existing educational resources of regular institutions of higher learning. One is correspondence colleges and departments (divisions) set up by institutions of higher learning that are responsible for the organization and management of correspondence education (see Figure 2). The other is correspondence departments set up one level below under the administration of academic affairs office that is responsible for the organization and management of correspondence teaching and accept the unified management of the academic affairs office. (see Figure 2).

Figure 2
The Organizational Structure of Correspondence Education in Regular Institutions of Higher Learning



- **Management System and Operation Mechanism.** In terms of management system, correspondence education run by institutions of higher education is led and inspected by the Ministry of Education with regards to guidelines, policies, and planning. It is planned and managed by ministries and commissions, as well as local education authorities, in line with the *Provisional Regulations on Correspondence Education Stations of Regular Institutions of Higher Education (Jiao Cheng [1993] No.12)* issued by Ministry of Education in 1993. Correspondence education stations are under the leadership of hosting schools and under the leadership of those instituitions that have them set up. The local education authorities where they are located should instruct and supervise their work, including those of the provinces, autonomous regions and municipalities under the direct administration of the central government, and cities specifically designated in the state plan.

Organization and Management System of Online Education

The Chinese government decided on and implemented the cross-century "Modern Distance Education Project" in the second half of the 1990s. By 2003, 68 institutions of higher learning had received approval from the Ministry of Education to pilot and explore a modern distance education model based on two-way interactive satellite TV and computer networks. They gradually formulated their own distinctive organization, management, and operation model during the course of offering online education.

- **Organization Structure**. In order to advance the implementation of online education, pilot institutions of higher learning established online education colleges, which then set up study centres (tutorial centres) for teaching and management all over the country. Furthermore, to advance the opening and sharing of educational resources, from 2005 to 2007, the Ministry of Education gave approval to Open Edutainment, China Cyber Learning Co., Ltd., and Hongcheng Technology Development Co., Ltd. to establish a distance education public service system offering teaching management and learning support for online education in institutions of higher learning. The institutions of higher learning established their own public service systems and enhanced the strength of their online education. Due to the different methods of cooperation with public services systems, there are some differences in the organizational management models of online education in institutions of higher learning. There are three basic models.

  The first is off-campus study centres set up by institutions of higher education on the basis of local RTVUs, adult education colleges, and vocational schools without the cooperation with the publication service system. For example, Central South University established off-campus study centres based on provincial and city RTVUs. Now, its learning support network covers 25 provinces (municipalities and autonomous regions) nationwide.

  The second is to build off-campus study centres in cooperation with the distance education public service system. For example, Northeast Normal University has entered into cooperation with Open Edutainment, a public service system institution, to jointly build authorised off-campus study centres in 29 provinces (autonomous regions and municipalities)

  The third is a blended model combining the first two categories, including both independent off-campus study centres and those built-in cooperation with the public service system. An example is Chongqing University Distance Education College, which has built more than 160 off-campus study centres in 27 provinces (autonomous regions and municipalities) nationwide using the blended model.

- **Management System and Operation Mechanism.**The management of online education colleges in regular institutions of higher learning is divided into two categories, i.e., independently organized and non-independently organized online education colleges. Independently organized colleges are set up separately by pilot institutions of higher learning, and are independently responsible for the management of their human resources, money, and property. The non-independently organized ones are component parts of continuing education colleges and distance and continuing education colleges. The second type of online education colleges, along with their off-campus study centers and correspondence stations, either maintain independent management and operation or accept unified management under secondary colleges in terms of human resources, finance, and property, in the latter of which the teaching reform is gradually implemented and improved under the unified management system, training schemes, and platform management with correspondence education as well as evening universities.

DELIVERY SYSTEM AND TECHNOLOGY USE

The development of an open and distance education teaching system needs the support of information and communication technology. The innovative application of information and communication technology will drive the future development of the open and distance education teaching system. This section will review the three stages of the development of the open and distance education teaching system in China, exploring the role of the innovative application of information technology as a precursor to the current experiences of the development of the open and distance education teaching system in China.

1. Stage One: Radio and TV Education

In the 1970s, China started to build a top-down RTVU system from the central to the local. The extensive application of radio and TV technology promoted the development and popularization of open and distance education (Yang & Zhang, 2019). At that time, the RTVU system created a series of audio and video courses which were sent to learners via TV stations, satellite education TVs, and radio stations.

With the increasing maturity of the application of radio and TV technologies, open and distance education gradually developed two methods of teaching delivery. The first was programs broadcast by teaching institutions with the help of radio or radio and TV technologies and received or watched by learners with radio or TV terminals. Although the

programs couldn't be played back and it was necessary for learners to arrange their time in line with the programs lists, the advantages of this method lay in its rapid spread and wide coverage.

The second was audio and video recordings sent to learners. These were usually TV programs made by local teaching centers through satellite reception teaching institutions. Learners listened to or watched the programs with the help of broadcasting devices. The advantages of this method lay in the repeated use of teaching resources, and so that learners could study more flexibly.

2. *Stage Two: Multimedia and Digital Learning*

At the end of the 1990s, the growing use of computers and network technology in the field of education promoted the digital transformation of open and distance education in China. The teaching system developed in new directions in terms of the design, development, and storage of learning resources and the organization and management of learning activities.

Firstly, in terms of the design and development of learning resources. learning resources integrated a wider range of media and became more interactive. For example, the digital teaching materials launched by the OUC integrate multimedia resources and include multiple functions such as content searching, learning process records, and tests and exercises, encouraging learners to approach the content of the teaching materials from several perspectives (Zhang et al., 2017).

Secondly, regarding the storage and transmission of learning resources, computer storage gradually took the place of audio and video tapes, making it more convenient to store and deliver information and teaching resources. The online delivery of teaching resources gradually became the mainstream thanks to the development of online technology and the improvement of related infrastructure.

Lastly, the emergence of learning management systems thoroughly changed the distance education learning environment from the perspective of the organization and management of learning activities. With the support of learning management systems, all learning activities can be completed virtually. The teacher-student relationship has been reconstructed, and the autonomy and flexibility of learning has been enhanced. Teaching institutions have made corresponding changes in the design of course resources and learning activities in line with the properties of online learning.

3. *Stage Three: Individualized and Smart Learning*

Due to technological development bottlenecks, early learning management systems were dominated by one-way information output. The interaction between learners and teachers, as well as the interaction between learners were largely ignored. Learners also had little access to individualized support. With the arrival of Web 3.0, learning management is also becoming more intelligent. Supported by big data and learning analysis technology, now, learning management systems can evaluate learners' learning status by collecting and analyzing their features and behavioral data, and make corresponding proposals or pushing out relevant resources. Teachers, the other subject of the learning management system, can also identify students' existing problems and adjust their teaching strategies in line with the learning dashboard data provided by the system (Yuan et al., 2014).

Take the OUC's learning management system as an example (as shown in Figure 4-1). This learning management system was established on the basis of existing open-source platform Moodle. It supports course development under the guidance of the theory of social constructivism. Teachers can arrange teaching contents and develop learning activities according to the characteristics of the courses and the need for learning. In addition to studying course contents and completing assignments, learners can also join in activities such as forum interaction, wiki creation, questionnaires and surveys, ballots, and peer evaluation. With the support of various types of activities, interaction between teachers and students and between students themselves have both been strengthened.

Figure 3
Learning Web Page of the OUC Learning Network

A review of the development of the open and distance education and teaching system in China from the perspective of technology shows that the innovative application of technology has played an essential role in updating the teaching system. At the same time, more and more attention has been paid to a learner-centered philosophy, which is manifested in multiple practical ways during the course of the development of the teaching system.

MOOCs AND OTHER OPEN EDUCATION PRACTICES

Thanks to the joint efforts of the institutions of higher learning, governments, and other institutions in recent years, the construction of MOOCs in China has been successful. This section reviews the status of MOOC development in China, revealing the existing problems facing MOOC construction in China in order to give a direction for future improvement.

MOOC Platform Construction

The development of MOOCs in China falls into the two categories of international cooperation and localized construction. In the early stages, the development of MOOCs was dominated by cooperation of top China universities with renowned international platforms. For example, Tsinghua University, the University of Hong Kong, and Hong Kong University of Science and Technology signed a cooperation agreement with edX; Fudan University, Shanghai Jiao Tong University, and the Chinese University of Hong Kong joined Coursera; and Peking University and Hong Kong University of Science and Technology established cooperation with edX and Coursera (Yuan & Liu, 2014). However, due to language and culture limitations, open courses from international platforms were unable to adequately serve Chinese learners.

Against this background, the development of MOOCs in China entered a stage of localization. For instance, Tsinghua University launched the Classroom Online (www.xuetangx.com) platform. This was followed by CNMOOC by Shanghai Jiao Tong University. In addition to institutions of higher learning, other educational institutions also joined the construction of Chinese-language platforms. For example, the Higher Education Press joined hands with NetEase and launched MOOC of Chinese Universities (www.icourse163.org), and Peking University developed the Chinese Language MOOC (www.chinesemooc.org) platform in cooperation with Alibaba. Furthermore, the involvement of technology enterprises has strengthened the technical functionalities of these platforms, ensuring that MOOC platforms can better serve learners.

MOOC Resource Construction

The construction of localized platforms has made it possible for a number of Chinese universities to take part in MOOC construction. MOOCs are no longer a select project of some top universities; they have developed into an education movement with a common commitment from various types of institutions of higher learning. This has also provided favorable conditions for MOOCs to grow in number and diversify in terms of content. According to statistics from the Ministry of Education, by the end of 2017, domestic institutions of higher learning and related institutions had established more than 10 MOOC platforms. 3,200 courses from around 460 institutions of higher learning had been pushed online, and 55 million university students and learners from across society had chosen to study the courses (Chai & Jiao, 2018). As of October 2021, there were as many as 47,500 online courses with 364 million registered users, the number of people who chose to learn the courses had surpassed 755 million, and 290 million students had obtained MOOC credits (Wu, 2021).

The Rise of Regional Alliances

As more and more universities and institutions became involved in the construction of MOOCs, regional alliances began to emerge, to promote the development and management of quality MOOC resources. Among these alliances, some are national ones, such as MOOC China Alliance, others are regional, like Open Online Courses Alliance of Guangdong-Hong Kong-Macao Greater Bay Area, still others are cross-regional, such as WEMOOC Alliance, and some even focus on education of a specific discipline, for example, MOOC Alliance on Computer Education for Chinese Universities. Those alliances attracted more 100 universities from China, promoted the development of MOOC for the participating university and provided organizational support for the social service function of MOOC. At the same time, the emergence of these alliances laid an organizational foundation for the sharing of inter-university course resources and advanced credit transfer. Besides, the inter-university sharing of course resources has mitigated the unbalanced distribution of higher education resources, benefitting some relatively under-developed Western universities. However, there are still problems. When organizational structures become complicated, management and operation will be a challenge.

RESEARCH FINDINGS IN THE PAST FIVE YEARS

Over the past five years, good progress has been made in open and distance education in China in the fields of both research and practice. This section briefly introduces some typical research projects and action plans.

Construction of National Quality Open Online Courses

The positive involvement of the government is a key feature of the development of MOOCs in China. The Program of "National Quality Open Online Courses" are an important measure for the government to boost MOOC construction. In 2015, the Ministry of Education issued a document to encourage and guide universities to develop open online courses (Ministry of Education, 2015). The document proposed a plan to build national exquisite online open courses. In 2017, the Ministry of Education started the national recognition of quality courses. Each year, a batch of excellent open online courses are recognized. In 2019, the recognition of national quality online courses was inscribed in the new action plan, i.e., the "double 10,000 plan" for the construction of first-class undergraduate courses (Ministry of Education, 2019). The plan sets out the goal of offering more than 10,000 first-class undergraduate courses over three years, including the construction of about 4,000 first-class online courses. The first-class online courses mentioned here refer to national quality open online courses. In November 2020, the first batch of 1,875 national quality undergraduate courses were recognized (Ministry of Education, 2020). At present, the second batch of course accreditation work is also under way.

Exploration of A Credit Bank and Qualification Framework

The credit bank and qualification framework play a vital role in achieving a connection between formal education and informal education by recognizing various kinds of education and evaluating all kinds of results, which will create a path to continuing education and lifelong learning for all.

In 2012, the Ministry of Education entrusted the OUC to carry out the *Research and Practice of the Accreditation, Accumulation and Transfer System of Learning Results for National Continuing Education* project, and formally launched the exploration (Yang, 2017) of China's credit bank system. Subsequently, many other areas also started the construction of the credit bank, and the OUC system credit bank and the local credit banks developed in parallel. In November 2017, the OUC learning platform Credit Bank Online was officially launched (Huang, 2017). During the same period, 70 sub-centers for learning achievement accreditation were established in 31 provinces and 20 industries across the country and credit bank accounts were opened for nearly 4.8 million learners (Huang, 2017).

Research on credit bank construction has laid a foundation for the exploration of a qualification framework system. In 2018, the Ministry of Education once again entrusted the OUC to complete a project with the theme "Research on the Construction of a National Credit Bank and Qualification Framework." This project is dedicated to the design of a Chinese qualification framework based on international comparisons that can achieve the coordination and management of qualifications by building a unified framework and formulating capacity standards.

Distance Education Poverty Alleviation Projects

Distance education, as a form of highly costed-effective cross-regional teaching, plays a significant role in poverty alleviation through education. The OUC has carried out a series of poverty alleviation projects through distance education. These projects have helped to compensate for the shortage of educational resources in the less-developed areas and offered support for local economic and social development. The OUC launched the Long March Belt Educational Project Targeted at Alleviating Poverty in April 2017. With RMB 120 million of funding raised, the OUC planned to spend four years implementing degree education and non-degree education projects, as well as projects funding infrastructure construction, in 25 national poverty-stricken counties in 12 provinces, autonomous regions, and municipalities under the direct jurisdiction of the central government along the route of the Long March. (Wang, 2018). By December 2018, the OUC had invested RMB 24 million with 25,031 direct beneficiaries (Li & Shao, 2019).

The OUC has also given long-term labor and skills trainings to primary and middle school teachers in poverty-stricken areas, funded the construction of "cloud classrooms" in local study centers through the "One College Student per Village" program, and offered assistance to the "Three Regions and Three Prefectures."

Action Declaration of China MOOCs

In April 2019, China's Ministry of Education issued the *Action Declaration of China MOOCs* at the China MOOC Conference, demonstrating that the Chinese government is determined to advance the development of MOOCs in China together with all institutions of higher learning to ensure equal access to education and to improve quality education (Department of Higher Education of the Ministry of Education, 2019). The declaration reviews the six years of development of MOOCs in China and also put forward the five major visions for MOOC development in China. The first is to gain access to equality through MOOC development, promoting educational equality between regions and universities. The second is to gain access to education resources sharing by solving the restrictions, promoting the sustainable development of MOOCs. The third is to provide all-round learning support for the deep learning of learners, improving the competitiveness of MOOCs. The fourth is to build a road to innovation by practicing new educational philosophy and integrating the latest technologies. The fifth is to build a road to cooperation by strengthening multi-party cooperation, promoting international exchanges on MOOC construction, and offering a Chinese approach to global MOOC development. The above five major visions embody a consensus on the future development of MOOCs, offering guidance for the sustainable and systematic development of MOOCs in China.

The above section introduced a number of research projects and action plans in the field of open and distance education in China over the past five years. These projects and plans reflect the development trends of China's open and distance education. On the one hand, the construction of relevant systems and mechanisms of open and distance education has continued to improve, laying a foundation for the innovation and development of open and distance education. On the other hand, open and distance education has gradually broadened its influence, demonstrating a remarkable increase in social benefits.

CONCLUSION

After nearly a century of ups and downs, in particular, the 40 years of rapid development since the reform and opening up, China has made great progress in open and distance education. The structure and system of open and distance education in China has continued to improve, playing an important role on the world stage. Looking to the future, it is necessary to learn from the experience of the problems encountered during the development of open and distance education in China to create mainstream platforms of lifelong education and online education. At the same time, it is also necessary to pay attention to assimilating outstanding aspects of foreign open and distance education theories and practice to help China realize a leapfrog development from a big open and distance education country to a powerful open and distance education country.

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The Open University of Japan (OUJ)

05

05

Distance Education for Higher Education and Lifelong Learning in Japan

Masaya Iwanaga and Tsuneo Yamada

The Open University of Japan

ESTABLISHMENT

Correspondence University and Distance Higher Education in Japanese Educational System

Until now, lifelong learning has been considered to be the farthest from higher education within Japan's education system. One reason for this could be that lifelong learning has traditionally been viewed as a continuation of social schooling, and as "leisure learning" or "time killing" for persons with too much free time. But the greater reason lies with the higher education institutions' systems that were not structured to sufficiently meet the needs of lifelong learners. Rather, they were well known to be extremely closed systems for adult learners.

Early universities were open to anybody who needed or wanted to learn for as long and as much as they required, and they were not restricted to a specific age range. As modernization progressed, this form was gradually replaced by standardized

As a lifelong learning institution, OUJ aims to provide a wide range of people with opportunities for obtaining higher education.

education system. Nonetheless, as seen by the high percentage of adult students enrolled, universities in Europe and the United States continue to open their systems to adult students. According to the OECD (2010), Sweden had 28 percent of students aged 25 and up in higher education institutions (bachelor's programs), Finland had 26 percent, and the United States had 24 percent.[1]

When comparing Japan's university education to that of Europe and the United States, however, it is argued that the country's closed tendency toward adult learners is strong. With the exception of secondary school, the percentage of adult students enrolled in higher education is exceptionally low. The percentage of students in Japan's higher education institutions, including graduate schools, who are 25 years or older is estimated to be around 5%, which is exceedingly low when compared to the figures in Europe and the United States.[2]

1. OECD, Stat Extracts (2010). See Chapter 2, Section 2 for details including other countries.

2. This is an estimate from the Ministry of Education, Culture, Sports, Science and Technology "School Basic Survey Report". Accurate figures for students enrolled in higher education institutions by age have not been calculated in Japan's school statistics. As a reference, the number of "working students" is published by the Ministry of Education, Culture, Sports, Science and Technology, but each year the number is only about 2%.

The background to this is, first and foremost, the issue of school education's framework. The Japanese university and junior college system is meant for full-time students who attend right after high school graduation and is not suitable for employed or adult learners. The most significant barrier to adult learners' admission is the entrance examination system, which is tough to pass even for individuals with work experience. Then there's the socio-economic issue. The principles of lifetime employment, seniority, and new graduate recruitment, which are widely recognized as features of Japan's employment structure, greatly reduce the need for workers to return to a learning lifestyle in the middle of their professional lives (i.e., recurrent learning), and it has become extremely difficult to do even when it is necessary. Those beliefs are not as powerful as they once were, but they are undoubtedly still important in the workplace. Third, cultural aspects must be considered. People in Japan have a strong sense of belonging to the organization to which they belong, and they often feel terrible about resigning from work to pursue their own education or using new qualifications earned as a result of education to shift occupations. This "collectivist" trait of the Japanese people could be a major obstacle to adult education. These elements are said to have conspired in a convoluted fashion to keep adult learners out of Japan's higher education institutions.

In more recent years however, higher education in Japan has become increasingly open. Japan's modern education system begins with the "school system" of 1872 following Western Europe's modern public education concept and following the major changes to the system's trajectory that were made under the Education Ordinance of 1879 and the revised Education Ordinance of 1880 to match the actual situation of the country's stage of development. It can be said that Japan's higher education institutions have developed by repeating the process of creating numerous educational possibilities to fulfill the educational demands of the private sector, government standardization, and system integration. The bottom-up vector of diversification and dissimilation and the top-down vector of standardization and assimilation have been in conflict and struggle throughout the history of Japan's modern education system.

Higher education is no exception to this. Since the Meiji government defined the standard of Imperial Universities, higher education has taken the form of new educational

institutions being created in response to the public educational demands, and once they have grown and become socially established, they are publicly recognized by their position when viewed from the Imperial Universities. Educational institutions have been given official names (vocational schools, high schools, specialized training colleges, etc.) and officially recognized each time their place in society has become settled, as if they are individual ores that crystallize from the chaos of magma in descending order of their melting points.

Of course, not all higher education institutions were linearly integrated into the hierarchy with the Imperial Universities at the top. For example, higher teaching schools and specialist business schools formed a "collateral system" that was separate from the Imperial Universities, and in that sense, it can be said that Japan's higher education prior to the World War II had a multidimensional structure that was "diverse and specialized, and each had its own system of advancement."[3]

The General Headquarters of the Supreme Commander for the Allied Powers (GHQ) led postwar education reform that drastically altered the structure of higher education. Higher education was united in 1949 under the single designation "university" in terms of curriculum, length, admission procedures, instructor standards, graduation requirements, educational circumstances, etc. Schools that did not meet certain standards, which were mainly girls' educational institutions, were regarded as junior colleges, but since they were regarded as tentative forms that would be converted into four-year universities, fundamentally the simple scheme of "higher education = university education" was established.[4]

However, soon after this system of "higher education Equals university education" was formed, numerous forces were exerted toward diversification. For example, in 1951, the Ordinance Revision Advisory Committee proposed dividing universities into academic "ordinary universities" and "specialized universities" focused on the transfer of specialized skills, and in 1962, technical colleges were established, leading in a new non-university system (mostly industrial). Nevertheless, they were never able to break the scheme's framework, either in terms of influence or absolute quantity. Rather,

3. Ikuo Amano, "Higher Education System Theory – Search for a Japanese Model" in Shigeo Kono and Ikuo Arai eds., "Structure and Challenges of Contemporary Education" Gyosei (1978), p. 180.

4. Kazuyuki Kitamura, "Institutional Structure of 'Post-Secondary Education' in Japan" Hiroshima University, University Education and Research Center, "University Theory," Vol. 7 (1979), p. 25.

junior colleges, which had been formed as a transitional measure, had grown socially established and expanded during the decades after the war, posing a threat to the unitary concept. While the university was officially designated as the only conventional type of higher education, a different path was formed in society. However, because more than 90% of those who used that method were women, it could be stated that it did not become a societal force.

On the other hand, during the period of high economic growth in the 1960s and 1970s, there was another set of educational institutions that had achieved great growth both quantitatively and qualitatively. They were miscellaneous schools. Miscellaneous schools are a general term for "other types of schools" that are outside the provisions of the School Education Act and were educational institutions that had no standards thus had not been subject to review under public standards. However, at that time, some miscellaneous schools systematically provided advanced, specialized education over the same period as junior colleges, in response to the growing demand for education in the private sector. As their power gradually increased, there were increasing calls from miscellaneous schools for preferential legal treatment equivalent to Article 1 schools under the School Education Act. Then, after a decade-long movement by the National Federation of Miscellaneous Schools as a pressure group, a specialized training college system was established in 1975.

The subsequent quantitative expansion of specialized training colleges was remarkable, and the number of students had surpassed that of junior colleges about ten years later. The driving force behind this quantitative expansion was the increase in the number of specialized course students, especially male students, who qualified for admission as high school graduates. Also, in July 1975, the "Act on Subsidies for Private Schools" (together with an amendment to the "Private Schools Act"), which was enacted at the same time as the law related to specialized training colleges, functioned strongly as a measure to curb the quantitative expansion of private higher education institutions unlike anything else that had been seen in the post-war era, and the fact that it applied the brakes to overall admissions to universities also promoted the quantitative expansion of specialized training colleges as an alternative course.

This movement towards diversification of higher education institutions is not limited to Japan. Similar movements also occurred around the same time as Japan's in OECD countries such as the United States, Sweden, the United Kingdom, and then-West Germany. From that time on, the OECD began to replace "higher education" with the more universal concept of "post-secondary education." However, it is difficult to say that the term post-secondary education has gained widespread adoption in Japan. This is because the idea of "university" being the original form of higher education and distinguishing it from other educational institutions is still deep-rooted. However, no matter what term is used, it is certain

that the government must admit that in substance a wide variety of higher education opportunities already exists.[5]

The fact that the concept of higher education has been extended to post-secondary education means that the opportunities for adult learners to use higher education for lifelong learning are increasing and diversifying. Currently, there are more than ten types of post-secondary educational institutions that can be used as lifelong learning opportunities in Japan. The important ones are as follows.

1. University extension: approximately 27,000 courses per year, approximately 1,200,000 attendees per year.
2. Correspondence education at universities and junior colleges (including OUJ): 53 schools, about 200,000 students (of which about 90,000 are OUJ students).
3. Specialized training colleges and miscellaneous schools: Approximately 3,200 specialized training colleges and approximately 660,000 students; approximately 1,300 miscellaneous schools and approximately 120,000 students.
4. Private education and cultural businesses: A total of about 6,400,000 students per year nationwide.
5. Social correspondence education: 110 courses per year, about 53,000 students per year.

5. At the same time as the establishment of the specialized training college system, the Higher Education Council, which is a private advisory body to the Ministry of Education, Science, Sports and Culture said that "... higher education is not limited to ordinary universities, but has a wide scope that includes the Open University of Japan, university correspondence education, and vocational schools." (University Bureau, Ministry of Education, Science, Sports and Culture, "Planned Development of Higher Education" (1976))

The diversification of options described above has led to a wider range of choices from the learner's point of view. However, from the converse perspective of education providers, it means that competition for customers will intensify under a certain scale of demand for education. Since the peak of the population of 18-year-olds in 1992, the market situation has been deteriorating, and the situation continues to exist where other markets must be developed separately from the existing customer market in order to survive the intensifying competition.

In that sense, adult learners are an attractive market with large development potential. The potential demand for education (i.e., willingness to learn) for adults is not low, and the size of the market that has already been formed is not small.

The Open University Of Japan As The National Center Of Lifelong Learning

The Open University of Japan (OUJ) was established under the auspices of the Ministry of Education, Culture, Sports, Science and Technology (MEXT), and the Ministry of Internal Affairs and Communications (MIC). It is an accredited "correspondence university" with the approval of MEXT. Table 1 presents the history of OUJ since its inception as the University of the Air.

Table 1
Brief History of the Open University of Japan (Formerly, the University of the Air)

Apr. 1983	The University of the Air (U-Air) was established
Apr. 1985	Undergraduate students were accepted and Broadcast Lecture Courses were started
Jan. 1998	Nationwide digital broadcasting via CS (Communications Satellite) was launched
Oct. 1998	Students enrolled in undergraduate degree programs were accepted at Study Centers throughout Japan
Apr. 2001	The School of Graduate Studies was established for the Master's Program
Dec. 2006	A terrestrial digital broadcasting service was launched (for the Kanto region only)
Oct. 2007	The University of the Air was renamed with "The Open University of Japan (OUJ)"
Oct. 2011	Nationwide digital broadcasting via BS (Broadcast Satellite) was launched
Oct. 2014	The Doctoral Program was launched at the School of Graduate Studies
Apr. 2015	Online Courses were launched
Apr. 2017	The Center for Online Education (COE) was established
Apr. 2018	The Research Institute for Learning and Education Strategies (RILES) was established
Oct. 2018	Additional BS channel (BS 232ch) were made available to offer a variety of programs (shift from terrestrial digital broadcasting)

MISSIONS AND PROGRAMS

The Open University of Japan is legally classified as "Private University" that is funded by the Government's "Management Expenses Grant".

The missions of the OUJ are as the following.

1. As a lifelong learning institution, OUJ aims to provide a wide range of people with opportunities for obtaining higher education.
2. With a new framework of higher education, OUJ aims to provide high school graduates with flexible and mobile opportunities to continue their learning in post-secondary education.

3. As a higher education institution taking advantage of the benefits of the academic network, OUJ aims to enhance coordination and cooperation with existing universities aspiring to conduct higher education in the new era, utilizing the latest research outcomes and teaching methods. At the same time, with the mission of improving the quality of higher education in our country, OUJ aims to cooperate closely with other universities by promoting credit transfer, exchanging faculty staff, and distributing e-learning materials.

The OUJ students consist of regular students, non-degree students, and credit transfer students. Regular Students enroll to graduate with an academic degree. Non-Degree Students enroll just subjects of interest for a semester or for an academic year. Their purposes of the enrollment are career advancement, social contribution, lifelong learning, or academic research. Credit Transfer Students enroll to acquire credits at OUJ and transfer to affiliated universities, colleges, or schools. In addition, OUJ has Graduate School consisting of Master Course and Doctoral Courses.

The OUJ has Faculty of Liberal Arts for undergraduate education and the Graduate School for Master and doctoral education. Faculty of Liberal Arts offers six areas of study (Table 2) and the enrolled students must select one area of study and earn more than 124 credits in order to acquire a bachelor's degree.

Table 2
Six Areas of Study at The Faculty of Liberal Arts

Areas of Study	Objectives
Living and Welfare	Create sustainable, high quality of life by cultivating a deep understanding of food, clothing, and shelter; family; health; and welfare.
Psychology and Education	Understand various issues related to human psychology and its development through their relationship with modern society. Learn key knowledge and approaches necessary to support psychological development and education, with the aim of actualizing a sustainable society.
Society and Industry	Acquire the knowledge and skills to live in a sustainable and prosperous society by understanding the basic mechanisms governing a society and industry.
Humanities and Culture	Deepen understanding of thought, literature, and the arts, and explore the history of the characteristics and development of modern civilization, as well as local cultures and societies.
Informatics	Master concepts and knowledge relating to information and IT, which are essential for people living in highly information-oriented societies
Nature and Environment	Cultivate the capacity to take action and decisions contributing to a sustainable future by scientifically learning about aspects of nature and acquiring deeper understanding of their intrinsic qualities, as well as recognizing the relationship between human activities and nature.

As mentioned, in the School of Graduate Studies, Division of Arts and Sciences, there are Master and Doctoral Programs.

The Master Program provides opportunities for students from various backgrounds to study at their own pace without leaving their offices or homes and aims to be a place where students can obtain a degree for general education or advanced professional studies. The school develops human resources who have decision-making skills based on a deep and broad educational background and who can commit to society with their knowledge and vision.

The School of Graduate Studies Doctoral Program aims to nurture high-quality professional researchers who can overcome challenges in local communities or workplaces by deepening their expertise, and have the insight to integrate those challenges by focusing on their social and academic meaning and to cultivate highly educated intellectuals who can support a knowledge-based society in diverse ways by maximizing their educational level through independent and creative research.

DELIVERY SYSTEM AND TECHNOLOGY USE: BROADCASTING AND INTERNET

Credit-granting Regular Courses

Depending on the educational media, credit-granting regular courses are classified into three categories, which are: Broadcast Lecture Courses, Online Courses and Face-to-Face Courses (Schooling).

Table 3

The Course Numbers of Broadcasting Subject, Online Subjects and Face-To-Face (F2F) Subjects (FY2019)

FY2019	1st Semester					1st Semester				
	Broadcasting			F2F	Online				F2F	Online
	TV	Radio	Σ			TV	Radio	Σl		
Under Graduate	155	121	276	-	-	155	121	276	-	-
Graduate	5	53	58	-	-	5	53	58	-	-
Total	160	174	334	1.549	48	160	174	334	1.483	50

Broadcast Lecture Courses (two credits). The materials of broadcast lecture courses consist of broadcast lecture and printed textbook.

1. Broadcast Lectures (TV, Radio, and Video-on-Demand, VOD). OUJ offers broadcast lectures as a series of 15 sessions per courses (45 minutes per session) through television, radio, and VOD. More than 280 courses are available in undergraduate programs and 60 courses in graduate programs, totaling approximately 340 courses (as of April 2019). About a fourth of the broadcast lecture courses are renewed each year, as the lifecycle is four years in principle.
2. Printed Textbooks. The OUJ courses are designed to be studied through both broadcast lectures and textbooks, which are specially written for each of the courses by the OUJ academic staff and/or other experts in the given field. Some of the textbooks are highly valued by the general public, even after termination of the courses; some are revised with a fresh look and sold as the "OUJ Book Series."

Online Courses (one or two credits). OUJ started offering full online courses in 2016 and, comparing to other open universities, the history is short. These courses are created by course teams that include the instructor(s), instructional designers, production staff members, and a program manager. OUJ is planning to expand the line-up of online courses in coming years.

Table 4
Transition of Online Subjects

Year	Semester	Subjects Newly Developed	Subjects Operated
2015	1st	11	2
	2nd	-	2
2016	1st	13	10
	2nd	-	13
2017	1st	12	20
	2nd	2	26
2018	1st	10	38
2019	1st	14	48
	2nd	-	50
2020	1st	12	61

The Online Education programs at OUJ is delivered in both Synchronous and Asynchronous Modes. For the "Online Subject" in Credit-granting regular courses, they can be categorized as follows.

1. Moodle courses in asynchronous modes
These online courses utilize the learning management system (LMS) "Moodle" to deliver video lectures as well as reading materials online, so that students can study anytime and anywhere. Online quizzes given at the end of each session are given to assess students' understanding of the materials and students receive immediate feedback after taking these quizzes. In order to improve interactivity and to assure the quality of learning, students can ask questions directly to the instructors and participate in online forums to discuss materials with peers.

Student learning activities and assessment methods are designed according to the objectives of each course. Simulation tools and online group learning methods are adopted depending upon the subject.

2. Online Classroom courses in synchronous modes
This mode was developed in the midst of the Covid-19 pandemic in 2020 in order to cope with the closure of classrooms at the Study Centers. By using a teleconference system ("Zoom") and/or "Google Classroom", lectures and practicums were held in synchronous modes. While most participants in traditional face-to-face classes are confined to those who have enrolled at a local Study Center, students from all across the country were able to participate in Online Classroom courses, demonstrating the value of ICT. In the year 2020, 80 Online Classroom courses were offered.

Face-to-Face Courses (Schooling, one credit). Classroom sessions, known as "schooling," along with broadcast lectures, are pivotal in teaching and learning at OUJ. These sessions cover a wide-ranging of subject characteristics under the Faculty of Liberal Arts. In addition to the usual lectures and hands-on experiments, the face-to-face sessions sometimes include a variety of formats such as fieldwork and on-site observation visits. Classroom sessions are usually designed, planned, and held at the Study Centers throughout the country. The Study Centers in each location offer not only general courses, but also courses in distinctive subjects unique to the given region, such as local history and culture, industry, nature, and so on. Furthermore, several Study Centers collaborate with nearby universities and research facilities to offer such courses.

OUJ has 50 Study Centers (4 in Tokyo), 7 Satellite Spaces, and 64 Audio-visual Rooms throughout Japan. The Study Centers are used for conducting face-to-face class sessions and credit accreditation examinations. Tutorials and academic counseling are also offered at these centers. In addition, the Study Centers is also equipped with facilities for students to view or listen to broadcast lectures, and library services. Study Centers also function as venues for students to hold extracurricular and social activities.

The Study Centers are located on the campuses of public or private universities, or in municipal facilities. The Satellite Spaces and Audio-visual Rooms provide easier access to the abovementioned facilities to those students who live far away from the Study Centers in their prefectures.

Non-credit Courses

Lifelong Learning Channel. OUJ broadcasts are designed to satisfy people's different requirements for lifetime learning by presenting lectures on TV as extension programs, building on the academic experience of OUJ faculty while simultaneously breaking away from beyond the traditional framework of higher education. In FY2019, there were 218 TV programs produced for the Lifelong Learning Channel, with 190 in FY2020.

Non-credit Extension Courses. Working in partnership with relevant organizations, OUJ provides open access courses designed to develop professional skills that will help accelerate career development. Upon successful completion of these courses, OUJ issues both a certificate of completion and a digital badge. These courses are intended to bring flexibility to learning pathways and to meet the needs of diverse members of a lifelong learning society. Anyone can enroll in these courses, whether they are OUJ students or non-students. In 2020, eight new courses are planned to be provided with digital badge issuing services (two for school programming education, five for mathematical/data sciences and AI, etc.).

Table 5
The List of OUJ Extension Courses

Course Title	Academic Year (April to March)	Number of Badges Issued
Elementary School Programming Education: An Introduction	2020	366
Teaching Method of Scratch Programming	2020	206

MOOCs AND OTHER OPEN EDUCATION PRACTICES

MOOCs

Before OUJ launched official online courses in April 2015, OUJ participated in Japan's MOOC consortium JMOOC in October 2013 as a founding member, released one of the JMOOC platform services, and published some MOOCs.

In April 2014, OUJ offered two MOOCs as the first release from JMOOC. One of the courses was "NIHONGO STARTER (Japanese primer)", which was based on the Japan Foundation's standards for Japanese language learning and the Common European Framework of Reference for Languages (CEFR). The other MOOC was "Computer System", which was remixed from an OUJ regular TV course (the Principal Lecturer was Yoichi Okabe, former president of OUJ). The OUJ-MOOC platform was based on the CHiLO Book system, which was developed by CCC-TIES, a Japanese NPO. Considering the diversity of users' ICT environments, they adopted a combination of eBook (specifically, e-pub 3.0 and iBook), traditional LMS (Moodle) and several social media services such as Facebook (for registration and learner community), YouTube (for video delivery) and Mozilla Open Badge (for certification, Open Badge version 1).

In 2017, OUJ retreated from the MOOC platform service and the courses were moved to the Asia Learning Portal managed by Asian Association of Open Universities (AAOU0 and the University of the Philippine Open University (UPOU).

Open Educational Resources (OERs)

The Open Educational Resources (OERs) movement was initiated under the leadership of the Massachusetts Institute of Technology (MIT) and UNESCO. OER as a term was introduced at UNESCO's 2002 Forum on Open Courseware and defined as "teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions" (UNESCO and the Government of Slovenia, 2017, p. 1). Open licensing is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the authorship of the work.

At the second World OER Congress in Ljubljana, Slovenia in 2017, sustainable development and management, quality assurance, copyright and open license, as well as technical support using advanced search systems were identified as the main issues for OER. As for the contribution from technologies, while the storage and discovery of OERs was the priority issue, new uses of OERs were put in the spotlight in the context of digital transformation. At the 40th session of the General Conference of UNESCO (12-27 November 2019), a new recommendation on OERs for member countries was approved. The Japanese government voted for the new recommendation and the results were reported to and approved by the National Diet in November 2020. Pursuant to a request from Ministry of Education, Culture, Sports, Science and Technology (MEXT), an OUJ member joined the UNESCO OER Dynamic Coalition as an expert.

OUJ has participated in some OER movements as an institution that promotes open education. Since its establishment, OUJ's broadcast materials have been available free of charge to people who are within the coverage of a broadcasting station and have a TV and/or radio receiver. With the popularization of the Internet and mobile devices, OUJ launched a VOD service for accessing broadcast materials and most current students utilize it as the main content delivery medium. Some of the VOD materials are openly available as OERs and anyone can access them from the OUJ webpage (https://v.ouj.ac.jp/view/ouj/#/navi/home, only in Japanese). OUJ has continued to use the traditional name "OpenCourseware" and as of March 2021 the number of available subjects is 41 courses (consisting of 15 units each) and 145 units from different courses and programs. In addition, OUJ is a member of Open Education Japan (Formerly, Japan OpenCourseware Consortium) and Japan Massive Open Online Education Promotion Council (JMOOC).

RESEARCH FINDINGS IN THE LAST FIVE YEARS AND OTHER NOTEWORTHY PROGRAMS AND INITIATIVES

Open universities throughout the world have sought to implement available technologies which are sustainable in given contexts in order to fulfill the missions given to them by society and government and to realize their objectives. When the OUJ was established in 1983, the innovative media were television and broadcasting. The National Institute of Multimedia Education (NIME) was organized to launch OUJ and to support the research and development of broadcasting education. "Multimedia" in the name of NIME referred to broadcasting (TV and radio) and printed materials (textbooks) at that time. Unfortunately, NIME was abolished in 2009 in the midst of the administrative reform but its functions were partially succeeded by research groups and institutes affiliated with OUJ (currently, the Center for Online Education, COE, established in April 2017).

Digital Badges and Micro Credentials

While the "Lifelong Learning" program courses do not earn credit that is transferable to any formal courses at OUJ, "certificates" are issued after the student fulfills the completion requirements. The program is micro-credential-oriented and the course size is smaller. While the course materials are delivered through BS-TV or the Internet (i.e. video streaming), the evaluation is held only through the online e-learning system, which is outsourced to a cloud service provider. Each online learner fulfills the course assessment criteria and the learning platform automatically issues both printed and electronic certificates, that is, digital badges. This program was launched in April 2019 and the digital badges began to be issued in 2020. The first series of open online certification courses were developed for "Programming Education Program," intended primarily for elementary school teachers.

The digital badges are technically based on IMS Open Badge Version 2 (OBv2) and an OUJ Validator site is planned to be launched in 2021 for the secondary consumers of the badges. Every badge has its own metadata and recipients can confirm the information using the AOBA Student Portal. OUJ digital badges are based on Open Badge version 2 (OBv2, IMS Global Learning Consortium) and the information contained in OBv2 badges issued by other institutions can also be displayed. An example of the digital badge and its metadata are shown in Figure 1 and 2.

Figure 1
*An Image of A Digital Badge**

*Issued to certify the completion of "elementary school programming education program" for teachers. Various metadata information is embedded in the image file (png format)

Figure 2
An Example of the Metadata Description Embedded in an OUJ-AOBA Digital Badge

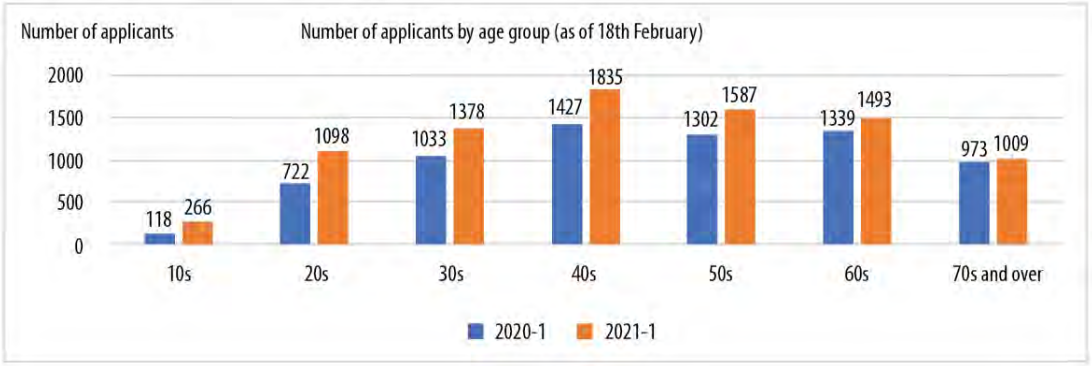
Prospects

The state of Japanese university education has also been greatly influenced by the COVID-19 pandemic. Remote learning similar to OUJ is being conducted on a daily basis even at general universities. As a result, the boundary between remote higher education institutions such as OUJ and general universities is also becoming extremely vague. Even general universities, which have traditionally conducted only face-to-face lessons, have begun to incorporate online lectures into their classes and conduct entire courses online.

To maintain the relative advantage of studying at OUJ under such circumstances, it is necessary to restructure the curriculum, improve lessons, and reform the organization with the aim to further improving the efficiency and quality of the education. Reforms are also indispensable for responding to the new normal, which is the new societal conditions that are expected after the COVID-19 pandemic ends. The expected and anticipated near-future image of OUJ can be summarized as follows.

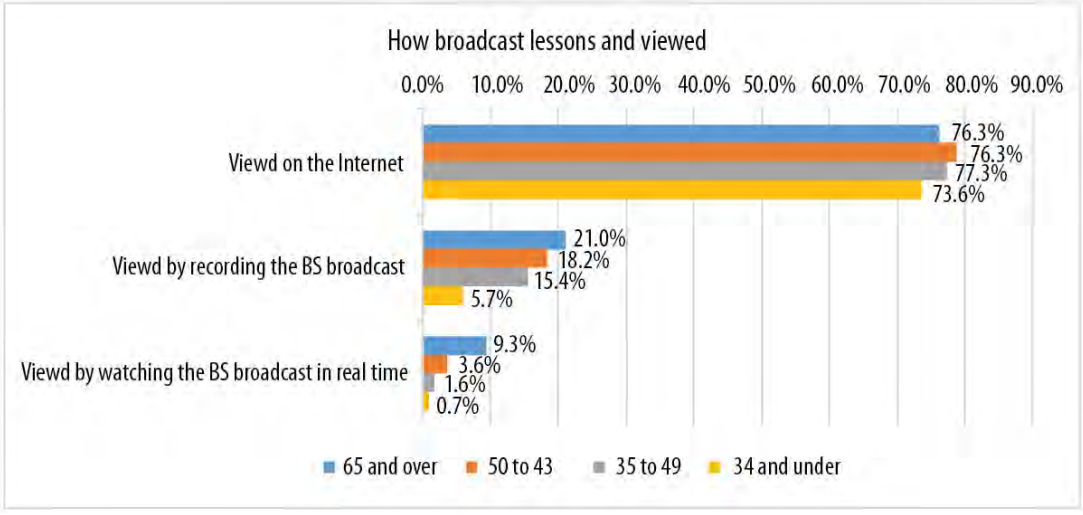
1. Promotion of recurrent education
   Enhancing the quality and quantity of OUJ practical recurrent education in accordance with the national government and especially the MEXT's "Adult Re-learning and Career Advancement" policy. For this, OUJ will increase the number of vocational qualification-related courses by actively utilizing various courses such as television, radio, and online. In particular, courses related to data science, AI, nursing, and teaching will be important points. This will strongly attract students in their teens and 20s to 40s, whose student numbers are increasing (see Figure 3).

Figure 3
Number of Applicants for Admission by Age Group (Undergraduate)



2. Enhancement of online courses
   The current situation in which students use the Internet more than broadcasting is shown in the figure below. In response to this, OUJ will qualitatively and quantitatively enhance the online subjects (on-demand lessons using the Internet), which are highly rated for their convenience by students as learners. However, at present, the OUJ curriculum is centered around broadcasting. Therefore, after reviewing the regulations and improving the production system to promptly eliminate the bottleneck in increasing online subjects, the number of courses available will be increased from 61 (combined undergraduate and graduate school total) in 2020 to about 120 in 2025 (currently, the total number of courses is about 370).

Figure 4
How OUJ Students View Broadcast Lessons (2020)



3. Conducting face-to-face lessons online
   As a response to the COVID-19 pandemic, all face-to-face schooling in the first semester of 2020 was conducted online. As a result, the advantages of simultaneous interactive lessons online became clear. Since the threat of the pandemic is expected to continue for some time, the conducting face-to-face lessons partially online and hybrid lessons (high-flex type / blended type) will be progressed, based on the experience of the first semester of 2020. Through this, it is certain that it will be easier for students living in remote areas and remote islands to take lessons that are equivalent to face-to-face schooling.

4. Promotion of research and development of media education
   After empirically examining the appropriate allocation ratio between broadcast lessons and lessons via other media, based on the advantages and weaknesses of various teaching forms of e-learning, OUJ will establish a “Media Education Research and Development Center” (tentative name) as the main organization in charge of the systematic research, development, planning, and production of media lessons. This can be thought of as a reduced version of the former National Institute for Multimedia Education. The target of research and development is not limited to online subjects. Media education has always been the most important theme for demonstrating research capabilities at OUJ.

5. Internet-Based Testing (IBT)
   In the past, the venue, date and time of credit exams were fixed (the exam could only be taken at a fixed study center on a fixed date and time), which reduced the degree of freedom in choosing subjects and restricted the admission of overseas residents. The promising solution is to conduct exams using IBT. The OUJ will establish effective measures to deal with the following three points: (1) identity verification, (2) misconduct monitoring during the exam, and (3) preparing students who are unfamiliar with the Internet, with the aim of conducting credit exams using IBT by 2022.

6. Conversion of the Study Centers' function
   The study centers' function will also change due to changes in the educational system, such as the conversion of face-to-face lessons to online and the introduction of IBT exams, as discussed so far. In the past, the focus of the centers' role was the conduct of credit exams and the provision of face-to-face lessons, but the focus will shift to functioning as the core (hub) of lifelong learning activities within the region. In order to supplement the ties between students that are becoming weaker due to the progress of e-learning, the function as a physical location for students to gather will become more and more important. We will improve this function and further increase the importance of the learning center as a location. At the same time, education on digital skills at the learning centers will be enhanced. Like first-year education at a regular university, the learning centers will be placed where remote learning alone is insufficient.

7. Cooperation with other universities
   Utilizing the merits of our remote education system, we will collaborate with regular universities. By collaborating with universities that do not have a correspondence course, we will expand the use of our classes at other universities. We will also actively consider adopting a transfer system (a method of acquiring a regular university's bachelor's degree by studying cheaply at OUJ for the first two years then studying at the regular university for the second two years, similar to the transfer system at American community colleges).

8. Enhancement of research functions
   Until now, OUJ has not progressed towards becoming a research university due to insufficient development of the research environment. In order to solve this, a standing council or committee will be established to consider matters including (1) conditions for improving the research ability of young faculty members, (2) measures to enhance research guidance in the doctoral programs and steadily confer degrees, and (3) the formation of an advanced knowledge platform for doctoral students and graduates to participate in undergraduate guidance, and detailed studies will be conducted to pave the way towards becoming a research university.

9. Promotion of IR / IE systems
   Institutional Research (IR) and Institutional Effectiveness (IE) systems will be established and their activities will be promoted. All data about the Foundation and the university (including learning analytics data) will be aggregated by the IR office. The aim of the IR office will be to systematize the IE cycle by aggregating and analyzing various types of information and providing the necessary evidence. (The orange part in the figure on the next page). In addition, we will introduce a (paid) online monitoring system to obtain fast evaluations and suggestions for university policy. We will also participate in the "National Student Survey" led by the Ministry of Education, Culture, Sports, Science and Technology, which is scheduled to be conducted in the very near future, and promote comparative research with other universities based on the data. Regarding public relations activities to promote OUJ's presence and its activities, we will actively utilize the above IR data to move away from advertising based on image strategy to evidence-based advertising.

These reforms and practices are fundamentally due to measures against COVID-19, but even once the pandemic ends and society becomes familiar with a new normal, the above-mentioned trend can no longer be stopped. Such education at OUJ must also become part of the "new normal."

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The Open University of Sri Lanka (OUSL)

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The Open University of Sri Lanka: High-Quality Education for All Through Inclusivity and Affordability

S. A. Ariadurai

The Open University of Sri Lanka

ESTABLISHMENT

Education in Sri Lanka has a long history which dates to several millennia. As a country, Sri Lanka considers education as a wealth and the state has taken the responsibility of providing education to its citizens from the primary level to the tertiary level, including vocational education. The Constitution of Sri Lanka, in its section on directive principles of state policy at 27(2)(H), includes 'the complete eradication of illiteracy and the assurance to all persons of the right to universal and equal access to education at all levels'.

Even though there have been a few private local schools teaching the Sri Lankan curriculum and private international schools mainly teaching the Cambridge and Edexcel curriculum of the United Kingdom, higher education has been until recently monopolized by several conventional state universities; and the only distance education institution, the Open University of Sri Lanka (OUSL). However, in recent years, the Government of Sri Lanka has allowed

The new mission of OUSL is to provide lifelong learning opportunities through Open, Distance and Flexible Education with a commitment to excellence in teaching and research.

private sector to offer degrees from overseas universities on a franchise arrangement and a very limited institutes their own degrees. Due to the limited places in the higher education sector, participation in higher education in Sri Lanka is exceptionally low with a General Enrolment Ratio of only about 20%, which is among the lowest of all middle-income countries, the group to which Sri Lanka belongs.

Introduction of non-conventional higher education in Sri Lanka could be traced back to 1972 when the Government of Sri Lanka established the External Services Agency (ESA) under the purview of the University of Sri Lanka to register candidates for external examinations conducted by the University. Regular distance education was introduced to Sri Lanka through the establishment of Sri Lanka Institute of Distance Education (SLIDE) by the Ministry of Education in 1976. Its objective was to provide tertiary education in the fields of mathematics, science, management, and technical studies for those denied higher education in six conventional universities at that juncture. The teaching methodology was printed material with periodical face-to-face sessions to discuss the study material, laboratory work at selected centres and continuous assessment through assignments.

The Open University of Sri Lanka as ODE-Based Institution

The OUSL was ceremonially launched on June 19, 1980, at a function held in Bandaranaike Memorial International Conference Hall (BMICH) in Colombo under the patronization of the then President of Sri Lanka HE Late J R Jayawardana. However, it was legally instituted as a University on July 22, 1980, through a government gazette notification and came into being from this day.

As the OUSL launched its operations, it took over two existing institutes, namely the Sri Lanka Institute of Distance Education (SLIDE) and the External Services Agency (ESA) along with some of the programs which were already offered by these institutes: Postgraduate Diploma in Education, Postgraduate Certificate in Pre-School Education, Certificate in Professional English, Diploma in Management, Diploma in Science, Diploma in Mathematics, and Diploma in Technology. The challenge given to the OUSL was to convert these programs which were conducted as external programs to pure distance mode and offer them. This challenge was taken up by the staff of the OUSL, and in the year 1981, the first purely distance education program, the Post Graduate Diploma in Education, with an annual enrolment of 1,000 students was launched by the new university. In the same year, another program, the Certificate in Pre-School Education with an annual intake of 400 students, was also launched.

Later in the year 2003, the Government of Sri Lanka launched the Distance Education Modernization Project (DEMP), aided by the Asian Development Bank to significantly increase the resources for modern technology use in distance education in Sri Lanka, with greater emphasis to online education. Through the development of distance education technologies, especially online education, the project aimed to increase access to post-secondary education in Sri Lanka while improving the quality and relevance of learning by introducing both blended learning programmes and fully online programmes. Though this project immensely helped the OUSL to expand and develop online capabilities, one of the objectives of attracting other state and non-state sector higher educational institutes to embark on distance learning did not have the expected results.

Another significant development in offering distance education programs in Sri Lanka was the circular issued by the University Grants Commission in 2010 requiring all the conventional universities to transform their existing external examination units into fully fledged Open and Distance Learning Units and renaming their External Degree Programmes and Extension Courses Units (EDECU) to either Centre for Open and Distance Learning (CODL) and Centre for Distance and Continuing Education (CDCE). This was followed up by issuing a Manual for Quality Assurance of External Degree Programmes and Extension Courses in 2014, to provide guidance to conventional universities, and higher educational institutions/institutes offering external degree programmes and extension courses through Open and Distance Learning (ODL).

In 1992 the Ministry of Public Administration of the Government of Sri Lanka issued a circular stipulating all the degrees awarded at the same level by different Universities in Sri Lanka coming under the purview of the University Grants Commission, including the Open University in Sri Lanka, shall be treated as equivalents. Through this initiative the Government of Sri Lanka ensured that the degrees awarded by the OUSL are treated as equivalent to degrees awarded by any other Universities that come under the purview of the University Grants Commission. Further, the OUSL enjoys the same academic and legal status as any other National University in Sri Lanka based on an act passed in the Sri Lankan Parliament and the recognition given by the University Grants Commission.

The OUSL, which has completed forty years of service to the nation in 2020, has made significant inroads into the higher education sector by providing alternative pathways for education to working adults and young adults, who had chosen the opportunity we have provided. The OUSL currently has a student population of more than 40,000 on roll, making it the largest higher educational institute in the country. Further, the OUSL is the only university in the country that provides learning opportunities to all its students almost at their doorsteps, through the network of Regional and Study Centres spread throughout the country.

Globally, the OUSL is one of the oldest ODL universities, being the second oldest in South Asia after Allama Iqbal Open University in Pakistan. Even though now there are many other Open Universities which are much larger than the OUSL, the OUSL remains to be one of the very few ODL universities that offer programs in wide varieties of fields including, engineering, sciences, health sciences, management, humanities, and education. From the humble beginnings in a small area in Colombo suburb, where the campus was identified to be established

in early 1980s, the university has now expanded to become the largest university in the country in terms of student numbers and reach, with its presence in every district of the country.

Early Innovations as Foundations to the Academic System

When the University commenced its operations, many innovative approaches which were not in practice in the Sri Lankan education sector, were introduced into its system which have now become the norm in other conventional universities in Sri Lanka. One of the earliest innovations introduced by the new university was a type of scaffolding system through which learners could proceed from fundamental knowledge to mastery at an acceptable level. Thus, a Ladder of Opportunity, with a framework of different levels from Level 1 to Level 7 were introduced in place of the traditional year-based progress of students. Today the system of levels introduced by the pioneers of the OUSL has become the norm in the country through the establishment of the Sri Lanka Qualification Framework (SLQF), where 12 levels of tertiary education have been recognized. The first two levels (Levels 1 and 2) are pre-university levels while Levels 3 to 6 belong to the undergraduate studies. Levels 7 to 10 correspond to postgraduate studies, with Level 7 at postgraduate certificate and Level 8 postgraduate diploma. Levels 9 and 10, respectively, belong to the Masters' degree of one year and two years (including a research component) duration. While Level 11 belongs to the MPhil (totally research based), Level 12 is the doctoral (PhD) level. The OUSL too has now adopted this standard SLQF.

Another unique aspect that was introduced at the inception of the OUSL was assigning credits to the quantum of work carried out by the learner. Though the definition of credit has changed from what it was at the inception, the concept of attributing credit ratings has now been nationally accepted. Accordingly, in Sri Lankan higher education system one credit is defined as 45 to 50 Notional Learning Hours (NLH). The OUSL too has adopted this system with a slight modification to suit the distance education scenario. Table 1 describes the way the NLH are calculated at the OUSL to assign credits to the individual courses.

Table 1
Description of Notional Learning Hours (NLH) at OUSL

Type of Activity	OUSL Defined / Scheduled Unit	Number of NLH	Comments
Studying printed lesson material which includes reading and understanding the session, completing the activities in the sessions, preparations for day schools and all other learning activities related to the printed session	One session	5 hours	
For practical work, including laboratory / field work/ clinical work / micro-teaching / teaching practicum	1 hour	1.5 hours	For each 1 hour of laboratory/ field/ clinical studies scheduled by OUSL, half an hour of independent studies is recommended. Notional learning hours include time allocated for conducting practical work, preparation, writing any reports and the time allotted for assessments
Day school	1 hour	1 hour	
Assessment/assignment	1 hour	1 hour	
On-line support	1 hour	1 hour	
Literature search	1 hour	1 hour	
Writing dissertation	1 hour	1 hour	

Continuous Assessment (CA) and acquiring a minimum mark for the CA to obtain eligibility to sit the Final Assessment is another novel concept introduced by the young university, which again has now become a norm in the Sri Lankan university system.

PLANNING AND DEVELOPMENT

Every five years, the university develops a Corporate Plan and a Strategic Management Plan (SMP) envisaging the strategies that are planned to be adopted by the university and the action plans to achieve them based on national plans and other developments that are taking place around the world. The existing plan covers the years 2021 to 2025. Based on the SMP, action plans are identified for every year. The Council of the university monitors the Action Plan of the year on a quarterly basis and ensures that the plans are implanted accordingly.

With the introduction of the new Corporate and Strategic Management plans in 2021, the university revised its vision and mission statements which were in existence for the last ten years or so. Accordingly, the new vision statement of the OUSL reads as to

attain excellence in life-changing education by providing equitable learning opportunities and the new mission statement is to provide lifelong learning opportunities through Open, Distance and Flexible Education with a commitment to excellence in teaching and research.

Based on these new visions and mission statements, six goals for the university for the next five years starting from 2021 have been devised. These goals are as follows.

Goal 1:
Achieve excellence in quality of teaching and learning which support life-changing education.

Goal 2:
Achieve excellence in research, along with global visibility and recognition.

Goal 3:
Improve human capital and infrastructure facilities.

Goal 4:
Widen access to education and enhance opportunities for Life-Changing Education.

Goal 5:
Ensure high quality educational support services.

Goal 6:
Ensure social and environmental responsiveness.

Further, for each of the goals, a number of objectives and corresponding strategies to achieve these objectives have been developed. Accordingly, a total of twenty-eight (28) objectives and seventy-six (76) strategies are in place. Further, for each of the strategies, action plans have been developed to achieve the planned strategies and these actions plans are monitored on a quarterly basis, by the Centre for Quality Assurance of the university and a quarterly report is submitted to the Council of the University.

MANAGEMENT SYSTEM

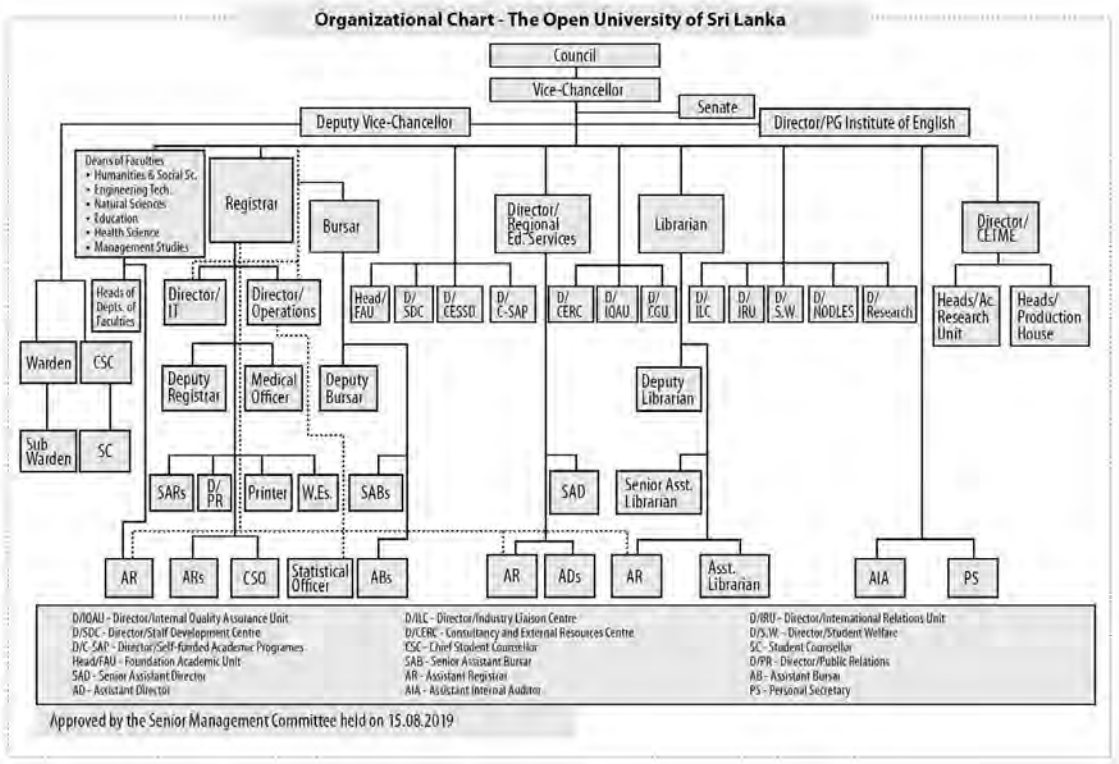
The Organizational Structure

Even though the OUSL when established had a different management system to that of the conventional universities, in the year 1987 the university's management structure was converted to one that is similar to the conventional universities, with the introduction of the first OUSL ordinance by the Parliament of Sri Lanka. Accordingly, the Governing Authority of the University is a Council which is chaired by the Vice-Chancellor who is the Chief Executive Officer and the Chief Financial Officer of the University. The Council of the University comprises of all the Deans of the Faculties, two Representatives of the Senate and the Deputy Vice Chancellor of the University. In addition, the University Grants Commission appoints a specified number of external Council Members, one more than the internal members, as in the case of the conventional universities in Sri Lanka. However, for the OUSL there are three additional appointed members, one from the Ministry of Higher Education, one from the Ministry of Mass

Communication and one representing the Committee of the Vice-Chancellors of Sri Lanka. The Registrar of the University, who is the chief custodian of the university properties and is in-charge of the non-academic affairs of the University acts as the secretary of the Council. Figure 1 illustrates the organizational structure of the OUSL.

The highest academic body of the University is the Senate which is chaired by the Vice Chancellor and comprises all the Deans of the Faculties, Heads of the Academic Departments, Directors of the various entities of the university, Librarian, and representatives from Faculties. Each Faculty of the University will have its own Faculty Board chaired by the relevant Dean to recommend proposals to the Senate.

Figure 1
Organizational Structure

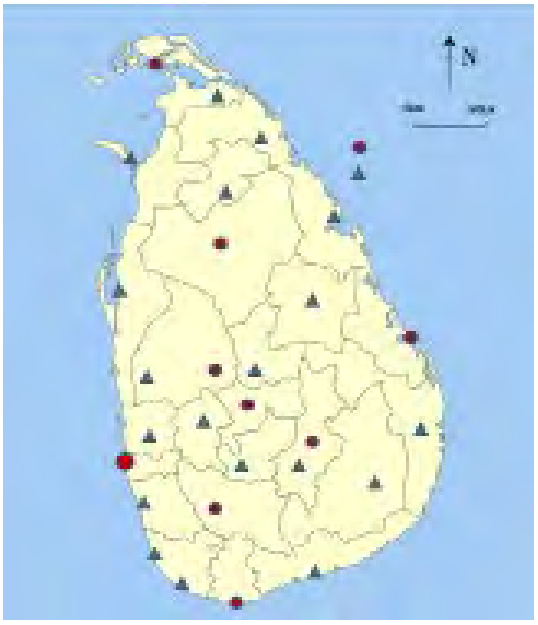


The university has a Chancellor who is the ceremonial head of the institute who presides over the annual convocation of the University. The first ordinance (legal governance document passed by the parliament of Sri Lanka which stipulates the legal conduct of the university) of the OUSL based on which the university was established was later replaced by a new ordinance

in 1991, which is still in place albeit necessary amendments being introduced over the years to cater the new developments that took place over time. As the existing ordinance needs revisions to reflect the changes that have taken place in the university and in the higher education sector in the country and the overseas, the university has now recommended to the UGC that the existing ordinance be replaced by a new one to cater the new and future development of the university.

The Regional Educational Services (RES) which is the backbone of the University too was established at the inception of the university, with about thirteen (13) centres island-wide situated mostly in the Government Technical Colleges. From these modest beginnings, by 1994 the university had expanded to have four Regional Centres and a few Study Centres in some of the provincial towns, mostly in its own buildings. Major expansion of the Regional Educational Services took place with the dawn of the new century when permanent buildings were built in many of the Regional and Study Centres. In the last decade, the university has further expanded its reach to the entire country with nine (09) Regional Centres, one each in every province of Sri Lanka and nineteen (19) Study Centres covering every district of the country. Currently the university has its own permanent buildings in twenty-three (23) of the centres. Five of the centres currently operate in rented buildings, though the government authorities in those areas have allocated lands for establishing permanent centres in the future. Figure 2 illustrates the locations of the Regional and Study centres.

Figure 2
Location of Regional and Study Centres of the OUSL



Organizationally, the OUSL is fully owned by the state and comes under the purview of the University Grants Commission (UGC) of Sri Lanka. Apart from the OUSL, there are sixteen (16) other conventional universities governed by the UGC. Even though all sixteen conventional universities are fully funded by the Government of Sri Lanka, in the case of the OUSL, the Government partially funds the university in the form of wages of all the permeant staff and required Capital Grants for approved developments. The rest of the expenditure of the university is met through generated funds, of which the main contribution comes from the tuition fee charged from the students. Therefore, the OUSL is the only fee-levying state university in Sri Lanka. However, as the substantial portion of the fund comes from the state (nearly 65%

of the expenditure), the fee levied by the university is substantially low, thus making it an affordable higher educational institute for the entire population of Sri Lanka. Further, to cater the financial needs of the students who are from economically disadvantaged backgrounds, the university offers many need-based scholarships and bursaries. These bursaries are in addition to number of merit scholarships offered without considering the economic background of the students.

The Academic Programs

When the University commenced its operations, two Boards of Studies, one in Humanities and Social Sciences (HSS) and the other in Management, Science and Technology (MST) were established to develop and offer study programs. In the period between 1982 and 1984, the University launched its first-degree program in the form of the Bachelor of Laws – LLB. Later, a degree program in Natural Sciences commenced in 1983. These programs are still in existence, of course with necessary revisions made along the way.

The Certificate in Technology programs, which were inherited from the earlier institutes, were upgraded to Diploma in Technology in 1985 and later to Bachelor of Technology (Engineering) in new disciplines such as Energy Engineering, Transport Engineering, Water Resources Engineering and Computer Engineering. These were the first professional degree programs in Engineering offered by an Open and Distance Learning institute anywhere in the world. Later in 1989, on the insistence of the UGC, the University was forced to change the specializations in the engineering to the more conventional fields as offered by other conventional universities. The University currently has six fully fledged faculties and 30 academic departments. These six faculties

through their academic departments offer educational programs in study areas of Social Sciences, English Language, Law, Library Sciences, Management, Education, Natural Sciences, Industrial Studies in Agriculture, Textiles, Apparel and Fashion, Engineering, Nursing, Medical Laboratory Sciences, Psychology and Pharmacy leading to Degrees, Diplomas and Certificates. Table 2 lists these Faculties and Departments.

Table 2
Faculties and Academic Departments of the OUSL

Faculties	Department
Education	Early Childhood and Primary Education
	Secondary and Tertiary Education
	Special Needs Education
	Educational Leadership and Management
Engineering Technology	Agricultural and Plantation Engineering
	Civil Engineering
	Electrical and Computer Engineering
	Mathematics and Philosophy of Engineering
	Mechanical Engineering
	Textile and Apparel Technology
Health Sciences	Basic Sciences
	Health Education and Research
	Medical Laboratory Sciences
	Nursing
	Pharmacy
	Psychology and Counselling
Humanities and Social Sciences	English Language Teaching
	Language Studies
	Legal Studies
	Social Sciences
Management Studies	Accounting and Finance
	Human Resources Management
	Marketing Management
	Organizational Studies
Natural Sciences	Botany
	Chemistry
	Computer Science
	Mathematics
	Physics
	Zoology

Being an institution that promotes lifelong learning, there is no strict admission criteria other than being over 18 years of age, and the entry point to the university will be decided by the qualifications of the applicant. Currently the university offers 75 academic programs at Certificate, Advanced Certificate, Diploma, Higher Diploma, Bachelors and Masters' level and several short courses. Foundation courses in Science and Social Science are also offered to provide an avenue for those who do not have the requisite school level entry qualifications to degree programs.

Furthermore, there are opportunities to register for programs leading to research degrees such as MPhil and PhD. All academic programs of the university are carefully designed so that they are nationally relevant and conform to the guidelines laid down in Sri Lanka Qualification Framework (SLQF) and have received the approval of the Quality Assurance and Accreditation Council (QAAC) of the UGC.

Noteworthy Programs and Initiatives

One of the uniqueness of the OUSL in comparison to other open universities around the world is its offering of science-based degree programs, including an accredited degree in engineering, which is on par with the engineering degrees offered by the conventional universities in Sri Lanka. Therefore, in this section it is proposed to describe this initiative of the OUSL for the benefit of other open universities around the globe.

The OUSL embarked on offering science-based programs from the very beginning itself. A dedicated Board of Study named Management, Science and Technology was established to offer these programs. Currently of the six faculties of the university, three faculties namely Engineering Technology, Health Sciences and Natural Sciences are science-based faculties. They currently offer programs in the areas of Agricultural and Plantation Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Electronics and Communication Engineering, Mechanical Engineering, Mechatronics Engineering, and Textiles and Clothing Engineering. Further, degrees are available in the areas of Nursing, Pharmacy, Medical Laboratory Technology, Psychology, and all the fields of natural sciences including Botany, Chemistry, Pure and Applied Mathematics, Physics and Zoology. Programs are also offered in the areas of Software Engineering and Computer Science.

One of the main components of any science-based program is the laboratory work. All the science-based programs of the OUSL thus have compulsory laboratory components and students are required to attend these practical sessions as part of their studies. However, the university offers these sessions at most of its Regional Centres where science and engineering laboratories have been established, thus enabling the students to attend them without much difficulty. Moreover, many departments conduct these laboratory classes over several different sessions, including sessions during the weekends, thus providing the students an opportunity to choose a session convenient to them. Only certain laboratory classes of higher level in the engineering program requires the students to come to the Main Campus in Colombo due to the lack of expensive equipment in all the centres. Even then in every possible instance the university provides mobile laboratory service whereby the staff travel to the centre along with the equipment and conduct the laboratory sessions nearer to the location of the student. Whenever students are required to visit the Main Campus, they are provided with accommodation in the Temporary Residential Facilities available in the Main Campus.

Further, as in any conventional science-based programs other activities such as projects, field work, field visits, clinicals, industrial placements and other appropriate academic activities are part of the program and are compulsory. However, as many of the students are employed, they may be able to obtain exemptions to some of these components if they have the relevant experience. The science-based programs offered by the university have been accredited by the relevant professional organizations and are very well accepted and recognized by the employers. In fact, over the last few years the OUSL graduates have bagged many first prizes for projects and internships competing with the graduates of the conventional universities.

DELIVERY SYSTEM AND TECHNOLOGY USE

As an institution that practices open and distance learning methodology, the OUSL heavily depends on printed and electronic lesson materials, augmented using modern technologies. The university has a dedicated centre for educational technology named Centre for Educational Technology and Media (CETMe), which through the University Course Development Committee (UCDC) sets the standards and monitors the development of the self-instructional printed learning materials of the university. The Centre also takes the responsibility of training all the permanent and contract staff in developing self-instructional learning materials.

The University started experimenting with the development of online learning in the year 2003 and currently has all the required frameworks and standards to develop online courses. In this context, CETMe is currently playing a unique role in transforming the OUSL teaching materials

to online mode. The courses of the OUSL are supported online through the Moodle Learning Management System (LMS) with a dedicated team of academics and IT support staff monitoring and administering the courses offered through the Moodle LMS. A dedicated committee, known as Committee for Assisting Online Learning (CAOL), looks into all the pedagogical, technological, and administrative issues that academics and students face while teaching and learning through online and recommends appropriate intervention to address those issues.

Currently, all the courses of the university are offered online under three categories as either Supplementary, Blended, or Online-Plus. This classification is based on the amount of online involvement available for a particular course and each course will belong to one of the three categories. Accordingly, the courses which are offered under supplementary category do not have any compulsory component for the students to participate. However, a student following the supplementary courses will have the benefit of having added learner support through various resources available online, and also will have the opportunity to interact with the tutor and the fellow students. The blended category of courses shall have at least 20% compulsory components, while the online-plus category of courses will have at least 80% compulsory components. The university is currently in the process of revisiting these definitions and analysing whether changes need to be introduced.

The University has also included formative assessments in the form of assignments, quizzes, and discussion forums in the blended online courses, depending on the discipline of study. Limited summative assessments (final exams) have also been conducted online, under supervised environment, in the computer laboratories of the Centres of the OUSL.

In the aftermath of the Covid-19 pandemic, the University embarked on conducting supervised online entrance tests for number of programs for which aptitude test is compulsory for admission. Further, the university has also introduced various types of authentic remote online assessments which are mostly unsupervised and are akin to open book tests.

With the success of this exercise, the university is currently in the process of institutionalizing online examinations so that the academic departments can use them as part of the Continuous Assessment as well. A separate online examination unit has also been established under the Examination Division to administer the online assessments. The university is also now studying the various examination proctoring systems to be introduced for online assessments. Currently, nearly all the 1,200 courses offered by the university are available online.

The success of blended/online learning depends on the access to learning materials by the students using a computing device. It has been found that many students in Sri Lanka do not have a personal device to access the learning resources. Further, many students also have connectivity issues due to various reasons, including affordability. Therefore, to address these issues, the university has established computer laboratories in all its centres around the country with adequate connectivity. Further, the university is currently in the process of providing wi-fi connection to all its Regional and Study Centres. With these initiatives, the university ensures no student is denied opportunity

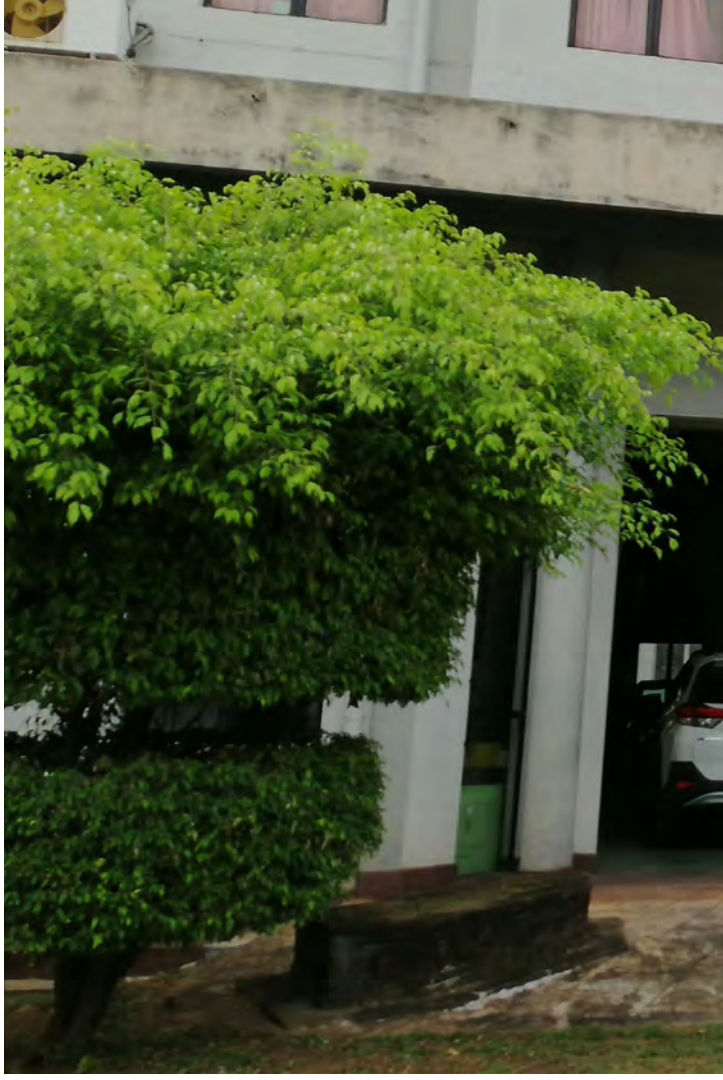
of education because of lack of computing resources. In addition, the university also has two dedicated video channels, Open U-Tube and OpenCast, which have a wide repository of video resources for augmenting student learning.

The university does not follow a synchronized academic year and the various faculties enrol students to their programs at different times of the year. In this way the university is able to optimize it resources, both physical and human. A hallmark of a quality ODL program is the flexibility given in time, in location, and the choice of courses to the learner in completing a study program with adequate learner support. Moreover, OUSL recognizes relevant prior qualifications of students so that they will get exemptions from certain courses in a program, thus allowing lateral entry to a program of study. The OUSL with flexible learning options is considered as an ideal learning environment for students who are employed or otherwise busy owing to family commitments.

The programs of the University are advertised in the national newspapers and the website of the university. From the year 2016, applications are entertained only via online. The registration process is completely decentralized and is handled by the Regional Educational Services (RES). The university is currently in the process of upgrading its Management Information System (MIS) with facilities for self-registration. The university hopes that, in the near future, all students of will be able to register for their programs online without physically visiting the university.

Every student registering with the OUSL is allocated two centres: one named as the Administrative Centre, which is the centre situated in the district where student resides, and the other the Academic Centre, which is the centre where the particular program is offered. The reason for this is that not all programs are offered in every centre due to dearth of facilities and minimum student numbers. Once the student registers for the program, he or she would be provided with an academic schedule which also includes sessions where the students will be provided opportunities to interact with the academic staff through “day schools” and other similar activities. Most programs of the university employ visiting academics to facilitate this process.

Over the last few years, even prior to the Covid-19 pandemic, the University has switched the mode of delivery of the days schools to electronic format by using the Big-Blue-Button software, whereby students are virtually connected to the academic who will be conducting a physical class in one of the centres. This video conferencing facility which connects all the OUSL Regional Centres and some of the Study Centres, has enabled the OUSL to decentralize academic program delivery effectively and efficiently. This enabled the university to respond and adopt to the Covid-19 situation in a swift manner. The university has now planned to expand the virtual delivery infrastructure further with multiple platforms and covering the entire country.



In addition to this type of face-to-face sessions, all the science-based programs of the university have compulsory laboratory components, and the students are required to be present at the designated Regional Centre to participate in these laboratory work. Marks scored for laboratory work are included into the Continuous Assessment component of the course.

The RES division of the OUSL provides extensive support required by the faculties of the university to conduct their academic programs and so as to reach the unreached. The regional network and the facilities provided by the OUSL has not only helped to overcome the physical distance between the teacher and the student but also has removed language, ethnic, social, and cultural barriers to higher education. The development of the regional network has created an ambiance to improve social equity across the country.

MOOCs AND OTHER OPEN EDUCATION PRACTICES

The OUSL has also been at the forefront to embrace new technologies and methodologies such as adopting and adapting Open Education Resource (OER)-based teaching material and e-Learning. Initially, the educational process of the OUSL is facilitated through especially designed self-instructional learning resources with limited face-to-face contacts. These learning resources are predominantly in print. However, they have either enhanced or supplemented with other technologies. Over the years these technologies have also been upgraded based on the emerging technological advancements. From the inception, the university has developed its own self-instructional materials using the traditional course team concept. Therefore, all the course materials developed by the university have been written from scratch by subject specialists, both internal and external. The university has its own House Style and instructional development process, with appropriate check lists to ensure that the lesson materials given to the students are truly self-instructional and understandable for an average student.

With the open knowledge movement, where more and more contents are released as open content, the university took a decision to look at the possibility of adopting available

OER into the self-instructional materials of the university. Consequently, since 2014, the OUSL took the initiative of promoting the development of OER and sharing them with the global community in view of expanding access to education, widening the distribution of high-quality educational resources, and reducing barriers to learning opportunities and opening lifelong learning opportunities for all. As of today, twenty-seven (27) resources in the areas of Chemistry, Botany, Zoology, Pure Mathematics, Physics, Remote Sensing and Medical Sciences have been published as OER by the OUSL under the CC BY-SA license. These resources could be accessed at the OUSL library website. This initiative has been taken in line with the framework for action on Sustainable Development Goal 4: 'Ensure inclusive and quality education for all and promote lifelong learning'.

Accordingly, the university adopted its first OER policy in the year 2014, which has been since updated in the year 2020. The purpose of this policy is to provide direction, guidance, and advocacy in internalizing OER adoption, adaptation, creation, and integration using the open license in the OUSL learning resources and provide the direction to follow Standard Operating Procedures (SOP) of the OUSL pertaining to course design and development.

Accordance with this policy, the university developed and launched a set of Continuous Professional Development (CPD) massive open online courses (MOOCs) on the adoption of OER and Open Educational Practices (OEP). This is an initiative of the Open University of Sri Lanka (OUSL), supported by the Commonwealth Educational Media Centre for Asia (CEMCA). The goal of this initiative is to raise awareness on the potentials of OER and OEP among practitioners from any field of study. The whole initiative comprises four CPD MOOCs to support participants solve authentic and real-world problems and issues that they are likely to be facing in their workplaces in relation to adopting OER and OEP.

A defining characteristic of these MOOCs is their unique design, which is scenario-based learning. Learning scenarios have been carefully crafted to reflect the kind of problems, issues, and challenges that practitioners are likely to be confronting in their environments. The university has already offered these MOOCs on two occasions. The CPD MOOCs consisted of four independent modules and students had the option to register for any or all the modules of their choice. Initially, 183 participants, registered in the first module of the CPD MOOCs. Subsequently, more numbers registered for different modules of the CPD MOOCs. Altogether 417 participants representing 28 countries registered in all four modules, and 136 participants have completed the modules and were awarded digital badges.

RESEARCH FINDINGS IN THE LAST FIVE YEARS

OUSL identifies research and innovation as a priority in the corporate plan. The university has activities and strategies at a satisfactory level that encourage and facilitate a research culture. This includes research funding and annual awards for excellence in research by academic staff. The interest in establishing partnerships, interactions, and collaborations through agreements and memorandum of understanding with local and international organizations/institutions and industry is a part and parcel of the university's activities.

For the purpose of advancing international partnerships, the university has a dedicated International Relations Unit (IRU) which was established in 2014. The IRU within a short time has made significant progress in establishing links with overseas partners and have initiated many projects that would enhance the internationalization of the university.

The university has established by-laws, rules and regulations for research and postgraduate research degrees. It has also employed clear and transparent policies and procedures in advertising and recruiting postgraduate students. Considerable number of programs are being conducted to enhance research skills of the staff. The university conducts training for Post Graduate research students on conducting research. The research is a component found in curricula of almost all undergraduate study programs and student engagement in research is encouraged and satisfactorily facilitated by the University.

Further, the university promotes research on ODL and places an emphasis on institutional research to learn lessons from the local context so as to adopt them in our practices to provide the students with the best form of ODL supports. For this purpose, the university has a dedicated committee chaired by the Vice-Chancellor known as the Committee for Research Assistance in Distance Education (CRADE) which is currently focussing on six thematic areas: Access, Equity and Ethics, Innovation and Change, Quality Assurance, Professional Development and Faculty Support, Learner Support Services, and Educational Technology.

Based on the research conducted by the academic staff several strategic decisions have been made in the way the university conducts its academic activities. For example, from the inception the university allowed its students unlimited attempts to sit for the final examinations of a course if they have successfully completed their continuous assessments. This enabled students to carry forward their continuous assessment mark for unlimited years, until they pass the final examination the course. As a result, many students had number of incomplete courses in their history and were taking long years to complete the programmes. In this respect number of independent research studies were conducted by several staff members on different programmes and the result of all these independent research findings suggested that only about 4% of the students can pass the final examination at the second attempt and the success rate further reduces below 1% for subsequent attempts. Accordingly, the university took a policy decision to limit the carry forward years starting from 5 years and then to 3 years and currently 2 years. Even though there was much resistance from among the students for this, the university was able to convince the students with statistical proof that limiting the number of attempts only helps the student to complete the programme quickly. Further, based on these findings the university also limited the total period spent by a student to complete a programme to three times the minimum duration. The completion rates of students over the last few years vindicates the strategic decisions made by the university based on institutional research conducted by its staff.

Another recent research conducted by the academic staff of the university found that only about 40% of our students have a laptop or desktop computers but nearly 95% of the students had smart phones. As the university has increasingly conducting its administrative and academic activities through the University LMS, this research results enabled the university to respond appropriately for the needs of the students. As a result, the university undertook various initiatives to provide device and internet access support to its students in the Regional and Study Centres of the OUSL. Academics are also increasingly developing contents that are compatible for mobile phones.

The University has also established a policy on financing research and financial support to staff to present research findings at international conferences as well as to publish in indexed journals. It further encourages researchers to obtain external grants from local and international research funding agencies to conduct research with an application and a national relevance. The OUSL also provides research grants to facilitate undergraduate research work.

In the year 2016 the university established a dedicated centre for liaising with the industry, known as the Industry Liaison Centre (ILC). Through this centre, the university was able to establish links with industry and undertake industry-based projects in all areas of expertise in the University. This centre has already facilitated many projects with the industry leading to number of patents being filed by academic staff of the university. In the near future, some of the products developed by the academic staff of the university with the facilitation of the Industrial Liaison Centre are planned to be commercialized through industry partners, with the university retaining certain amount of royalty.

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University of the Philippines Open University (UPOU)

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07

Philippines: Revolutionizing Disruptions for Sustainable System of Education (A Critical Reflection of the Events and Milestones)

Melinda dela Peña Bandalaria

University of the Philippines Open University

ESTABLISHMENT

Distance education (DE) in the Philippines was established through the initiatives of various individuals and organizations which shaped its development to its current status and articulations. Much had been written about it, mostly presenting in chronological order these initiatives deemed to contribute to the establishment of this mode of instruction in the country.

Most of the literature published about DE in the Philippines would trace it back to radio through the following initiatives: the "farmers' school" in 1952 by the Iloilo City-based broadcaster, Pacifico Sudario; teaching English to Filipinos in 1959 by the Department of Education and the Philippine Broadcasting Service; and the school format radio program discussing information on swine raising by the National Cottage Industries Development Authority (NACIDA) in 1963 (Librero, 2015). Radyo DZLB of the University of the Philippines Los Banos also started broadcasting customized

UPOU can be considered as the first open university in the Philippines and probably among the first in Asia to become fully online and deliver its instruction through distance elearning.

radio programs for farmers, rural home makers, and the rural youth in 1964 and in 1967 formalized the format through the "Paaralang Panghimpapawid sa Pagatasan (School on the Air on Dairying). The "School on the Air" format was also adopted by the Department of Agriculture in 1973 to support the Masagana 99 rice production program of the country.

Much earlier than the introduction of radio to the Philippines in 1922 by the American businessman Henry Herma (ELCOMBLUS, 2020) and at the same time that the correspondence school system was happening in other countries, the International Correspondence School (ICS), was founded in 1889 in Scranton, Pennsylvania and through the years were able to make its presence in so many countries, including the Philippines. The indicators of the presence of ICS in the country are as the following.

1. Up for auction at eBay was a printed matter cover from the Commonwealth of the Philippines to Scranton PA USA specifically addressed to the International Correspondence Schools. It was postmarked December 18, 1907 (Figure 1). It should be noted though that during that time, the Philippines was still under the United States governance, hence it cannot be conclusive whether this mail has anything to do with studying through the ICS. (https://www.ebay.com/itm/133982577518?chn=ps&mkevt=1&mkcid=28)
2. Two accounts of completing courses through ICS can be found in the Internet: Antonio "Tony Velasquez", a Filipino illustrator and regarded as the Father of Tagalog comics has an entry of completing a course from the International Correspondence School in 1934 ([(https://wikimili.com/en/Tony_Velasquez); and Tony Henson, another comic artist, also recorded completing a course "Commercial Arts" through ICS ((https://fil.wikipilipinas.org/view/Teny_Henson).

3. This author also has a personal account of attempting to take a course at ICS after seeing its advertisements in the Philippine popular reading materials. Most of the courses advertised were short courses and more on the technical vocational category (Bandalaria, 2019).

Figure 1
Printed Matter Cover from the Commonwealth of the Philippines to ICS, Scranton PA USA postmarked 18 December 1907

(https://www.ebay.com/itm/133982577518?chn=ps&mkevt=1&mkcid=28)

Another important contribution to the establishment of the DE in the country is the Science Teaching Using Distance Instruction (STUDI) which was implemented in 1984 by the University of the Philippines Los Banos. The goal was to address the lack of training of science teachers, a problem identified through a survey conducted by the then National Science and Technology Authority (now Department of Science and Technology); by making available opportunities for "longer-term training for teachers without requiring them to go on an extended leaves of absence" (Librero, 2015). This initiative eventually led to the establishment of the University of the Philippines Open University (UPOU) in 1995, which became the major player in DE in the country henceforth. UPOU is a Constituent Unit of the only national university in the country, the University of the Philippines (UP) with the mandate of democratizing access to quality education through this mode of instruction.

The other government-funded open university was also established in the Philippines during the 1990s: the Polytechnic University of the Philippines Open University (PUP-OU), a government-funded university, which was established in 1990 (https://web.archive.org/web/20150418114240/http://www.pup.edu.ph/OU/profile.aspx). The

UPOU and PUP-OU became the model in the offering of DE programs for the other academic institutions in the country. Before the COVID-19 pandemic, there were several academic institutions also known to offer academic programs in the DE mode of instruction. Most were established from 2010 and included among others Central Luzon State University, Bicol University, John B. Lacson Maritime University, Benguet State University, New Era University, Asian Institute for DE Foundation, and CAP College.

PLANNING AND DEVELOPMENT

Planning and development of DE varies across institutions offering programs in this mode of instruction. For UPOU, the planning and development took into account the mandate of the University of the Philippines as the only national university in the country and as such dictated the kind of academic programs that will be offered. In addition, the specific mandate of UPOU, which is to be at the forefront of using modern and relevant Information and Communications Technologies (ICTs) to democratize access to quality education also guided the planning and development processes.

During the early years of UPOU, the programs provided by UPOU were mirror programs of those in the university's residential Constituent Units (UP). This was the first articulation to democratize access to high-quality degree programs by making residential programs available in the DE mode of instruction to a wider variety of students, especially those from locations not geographically serviced by residential campuses. Other degree programs that are not offered by other higher education institutions are now offered by UPOU due to further identification of the gaps in the responses being made by academic institutions to the learning needs of the various professionals, especially in consideration of the rapidly changing knowledge and skill requirements of the major industries. Due to UPOU's standing, the majority of the degree programs it offered in the early years were post-baccalaureate or graduate degree programs. Only a few years after it was founded did it start to provide an undergraduate program, the Associate in Arts, and promote it as a "Second Chance" to earn an undergraduate degree. Most of the program's participants were adult learners, many of whom were already employed.

The planning and development of UPOU can be considered to be influenced by the dominant Information and Communication Technologies which can be used to bridge the physical distance between the students and their teachers, and the other elements that are essential to studying and successfully completing courses and programs. These can be seen in the ways that course packages have changed over time, as well as in how tutorial sessions and other learner support services have been offered to students. The institution and program planning of UPOU heavily considered the integration of radio, television, audio cassette tapes, and CD-ROMs into the architecture of course delivery.

Two significant events, the establishment of two full bachelor's programs and the incorporation of contemporary ICTs into its ecosystem, can be seen as having had

an impact on the planning and growth of UPOU. Due to these, the educational system has changed to distance elearning (DeL), or online distance learning; the demographics of its undergraduate students have changed due to the enrollment of an increasing number of younger and full-time students; and the opportunity to codify and concretize open education as another articulation of its mandate to reach the underserved sectors of the Philippine society.

The Internet has played a significant role in the development and transformation of UPOU, especially since it enables the university to reach learners even beyond the geographical confines of the country. Students outside the Philippines account for about 24% of the annual total enrollment. The Internet and its associated tools e.g. AI and Data Science are now shaping the direction of the future development and direction of UPOU. The changes on how instructional content is being delivered also resulted on the shift in the focus of research initiatives as well as the strategies or mechanisms of engaging with the community and doing public service.

For the county, in general, the Commission on Higher Education (CHED) provided some guidelines which shaped the planning and development of DE in the country. In 2005, this government agency issued the Memorandum Order 27 (https://ched.gov.ph/wp-content/uploads/2017/10/CMO-No.27-s2005.pdf) which provided specific policies and guidelines on DE which included the definition of DE and which institutions are qualified to offer academic programs in this mode of instruction. To strengthen the country's policies on DE and ensure its quality, Republic Act 10650, also known as Open Distance Learning Act (https://www.officialgazette.gov.ph/2014/12/09/republic-act-no-10650/) was also passed for implementation in December 2014. The law recognized UPOU's experience in doing Open Distance Learning and mandated it to provide technical assistance to other Higher Education Institutions in the country who are planning to offer programs in the distance mode of education.

MANAGEMENT SYSTEM

The management of DE institutions in the Philippines has some unique features as follows.

1. Managing DE programs using the policies and procedures adopted from residential/conventional context. Most, if not all, DE institutions in the Philippines, particularly the open universities, are part of conventional or residential universities. The UPOU, for instance, is a part of the University of the Philippines System while the PUP-OU is part of the Polytechnic University of the Philippines System.

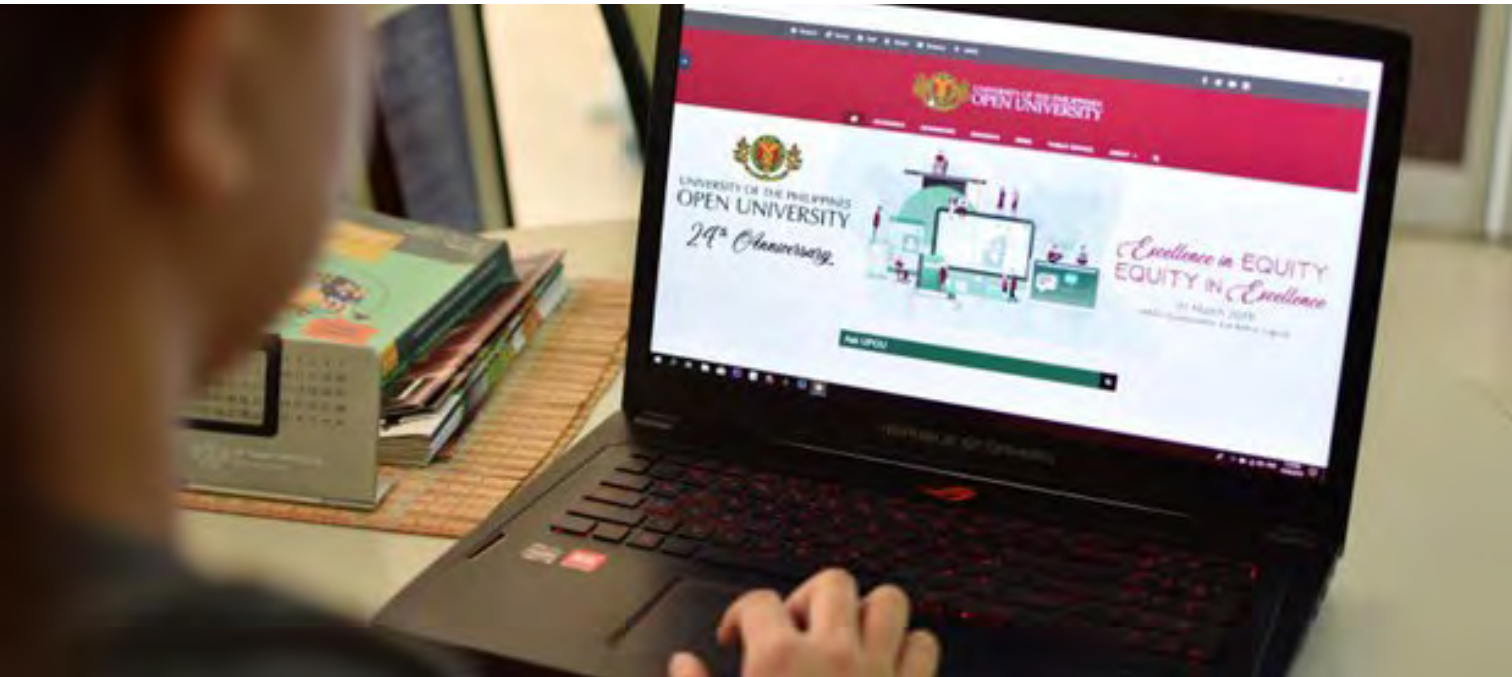
   Both open universities started with offering degree programs in the DE mode which were adopted or "translations" of the residential programs. Because of this, the system and requirements for admission were also adopted from the residential offering and only the mode of instructional delivery, that is DE, was the difference. Hence, despite the "open" nomenclature attached to the name of the institution, such was not concretized

in the most basic indicator of openness, which is admission to the program and the learning environment. This is the first unique feature of DE in the Philippines: managing it through the abduction of policies, processes, and procedures from the residential or conventional instruction.

2. Remote management. As described, the implementation of DE in the Philippines, similar to other countries, highlighted the important role of the Learning Centers, where the students go for the different processes associated with being a student, and Testing Centers for sit-down and proctored examinations. Hence, the management of a DE institution during its early years also involved the management of the Learning Centers strategically located all over the country.

   With the implementation of distance eLearning as the main mode of delivering instruction, the transformation of Learning Centers became necessary. With fewer students reporting physically to the Learning Centers, the major functions will have to evolve to align with the emerging needs of Distance eLearning. Specific for UPOU, the Learning Centers were transformed into Mega Learning Hubs which can become the Regional Centers as mandated in Republic Act 10650 or the Open Distance Learning Act (https://www.officialgazette.gov.ph/2014/12/09/republic-act-no-10650/). At the same time, they can still perform some of the functions of the Learning Centers as the need arises.

3. Integration of modern ICTs into the university administrative processes to facilitate the remote management. Given that, the staff and offices are not centralized in one location e.g., some of the full time staff are holding office in the university learning centers and there are also part-time staff like the lecturers, tutors, and proctors who are based not only all over the country but outside the country as well, the use of modern ICTs to connect, communicate and collaborate, and compensate the services rendered became necessary.



DELIVERY SYSTEM AND TECHNOLOGY USE

The Pre-Internet Era

Distance education in the Philippines has the same historical roots as in most countries which started the journey at almost the same time, that is the use of radio to deliver instruction to the learners. Historical accounts, however, point to the fact that these initiatives were mainly for non-formal courses as in the case of DZLB's Paaralang Panghimpapawid. For degree programs, the use of printed course materials, as in the case of the STUDI implementation, became the main technology.

In STUDI, the main course materials, prepared by the university experts on science (Biology, Chemistry, Physics, and Mathematics) were printed into what was then referred to as "course modules" and mailed to the students enrolled in the program. Radio, which figured prominently in the beginnings of DE in the country, became supplementary with only the selected lessons recorded as radio lectures and broadcast over Radio DZLB. The radio lectures, with duration of 8-20 minutes, were also "stored in magnetic audio cassette tapes, and distributed to students residing in the rural areas and not reached by the signals of Radio DZLB. The STUDI is a convergence of three information and communication technologies: print; radio; and the audio cassette. The way by which the course materials were prepared can also be considered as the beginnings of the team approach to course materials development and preparations of the course pack, that is, the subject matter experts working with the radio script writers to produce the radio lectures.

UPOU continued the use of printed course materials that were mailed to the students as well as the once-a-month face-to-face (F2F) tutorial sessions in the University Learning Centers which characterize its forerunner, STUDI. There were no more recorded lectures aired over radio, instead, recorded audio lectures were stored in audio cassette tapes which became a component of the course packages for some of the courses. Television was used for a limited extent only probably because of the cost of airing the video-lectures, which could also be the same reason why this communication platform did not take prominence despite the penetration of television across socio-economic classes in the Philippines. A review of the available literature about the PUP-OU also revealed the use of printed course materials in delivering instructional content (Contact North. No date).

Both UPOU and PUP-OU implemented F2F sessions in university-designated Learning Centers. For UPOU, these sessions became the venue for university-trained tutors to clarify lessons that the students have difficulty understanding, provide feedback to the submissions of the students, and also monitor the progress of the students. On the part of the students, the F2F sessions or visits to the Learning Centers facilitated their submission of assignments/course requirements, sit for their proctored examinations, and attend to some other university processes like enrollment, pick-up of learning materials, and submission of

official documents. The F2F sessions and the Learning Centers also became the venue for students to meet and socialize with their fellow learners which somehow provided that sense of belongingness, which is usually missing among DE students,

Specific for UPOU also, there came a point when the number of students enrolled in a course in a Learning Center could no longer merit a cost-effective way of holding F2F sessions, hence teletutorials were held instead (Bandalaria, 2007). In this period of DE development in the Philippines, telephone played a major role to provide tutorial support to the students. In this teletutorial system, a speaker phone (Polycom, Figure 2) was used. The tutor was in the university Headquarter meeting a group of students F2F and connected through the telephone line to other small groups of students also gathered F2F in University Learning Centers.

Figure 2
The Speakerphone Used in iTeletutorials During the Late 90s to 2000

The teletutorial system can probably be considered as the early generation of technology-mediated synchronous sessions in the hybrid format where some students are F2F with the tutor and others are connected via the telephone line.

Disrupting the Disruption: DE in the Era of the Internet

DE has been considered as a disruption in the traditional educational system which was exclusive and very much anchored on the students' physical presence in the campus and perceived to be the indicator of quality education. This was articulated by Tait (2008 citing de Salvo, 2002) as follows with reference to the University of London External Study System:

> *The great advantage an Oxford or Cambridge man (sic but actually accurate) claims over his London rival is his social education. It is he says a moral training. His university career is far more than the acquisition of knowledge. He is no lowly student, working narrowly for his own hand, but a man among men, and he points to the union debating society, to the collegiate and university football, cricket and boating, as influence to this end. (de Salvo, 2002, p. 38).*

Probably, this challenge of proving that DE is at par with the conventional mode of instruction drove DE practitioners and scholars to maximize the potential of modern ICTs, like the Internet, to further bridge the physical (and hopefully, transactional or pedagogic distance as proposed by Moore, 2018) distance that separates the teacher

and the students and which cannot be fully addressed by the traditional media like print, radio, television, and even the teletutorial system.

Internet was introduced to the Philippines on 29 March 1994 (DICT, 2015 https://dict.gov.ph/the-history-of-internet-in-the-philippines/). There was a very slow integration, however, into the education ecosystem probably because it was not readily accessible to both the teachers and the students. Access here is multi dimension to include access to the physical technology; skills to use the technology; and the cost associated with the use of technology. Probably, among the first academic institutions to have Internet as a major platform to deliver instruction at a distance is the UPOU.

In 2001, UPOU started officially integrating the online component into its instructional delivery system mainly to replace the F2F and teletutorial sessions and beyond just a communication platform with students. The years 2004-2006 can be considered as the transition period characterized by the following:

1. the combination of F2F, tele and online tutorial sessions across courses offered by the university;
2. intensive training of the teachers in online teaching which included the use of the different features of a Learning Management System and moderating online discussions;
3. orientation and training of students on the use of the Learning Management System usually conducted in the University Learning Centers;
4. equipping the University Learning Centers with computers and Internet connection to facilitate access to the online courses by both the teachers/tutors and the students;
5. digitization of the course packages and uploading in the online course sites;
6. digitalization of the university processes e.g. enrollment and the different components of the Learner Support System like library services and counseling. This was accompanied by the training of the University Staff tasked to provide support to the students;
7. review of existing policies and procedures and putting in place relevant ones to provide policy environment conducive to online teaching and learning; and
8. intensive operations research to monitor and evaluate the innovations introduced into the different processes and subsystems of DE.

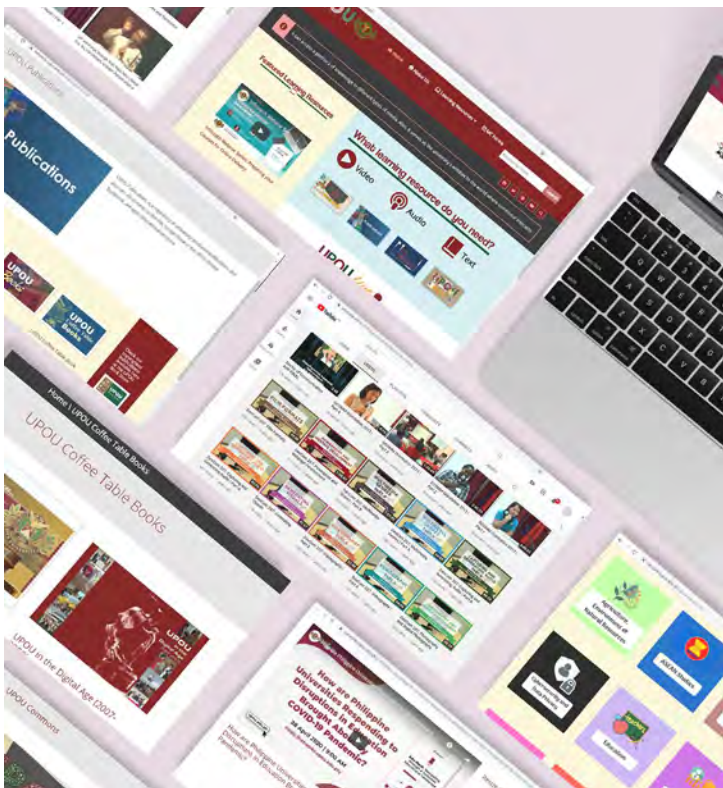
The UPOU became fully online in 2007 with all the materials digitized and processes and procedures especially those involving students transformed into the digital format. Online became the default with the analogue or offline version the option for those who still preferred it. Because of this, UPOU can be considered as the first open university in the Philippines and probably among the first in Asia to become fully online and deliver its instruction through distance elearning. DE evolved into distance elearning (DeL) with the main feature of distance or separation of teacher and students and eLearning implying the integration of modern ICTs into the teaching and learning process.

Specific to UPOU, Distance eLearning not only enabled the university to accept geographically dispersed students within the country but also made possible the admission to the degree programs of learners based in foreign countries. About 24% of the students are based overseas in more than 60 countries/cities.

The mobile technology, specifically the mobile phone, also played a major role to address the digital divide or exclusion at the time that the Internet was integrated into the DE ecosystem in the country. The mobile phone can be considered as a facilitating factor for the early success of online learning in the Philippines, it bridged the digital divide. In 2007, at the time that the UPOU became fully online, there were already 55 million Filipinos subscribing to mobile phone services (Bandalaria, 2009). Mobile phone was used to deliver short lessons and learner support services. Using mobile phone, the teacher can make announcements to the students if there are new materials uploaded in the online course site, reminders of submission dates for course requirements and examinations, and connecting to students who are inactive in the online course site, among others.

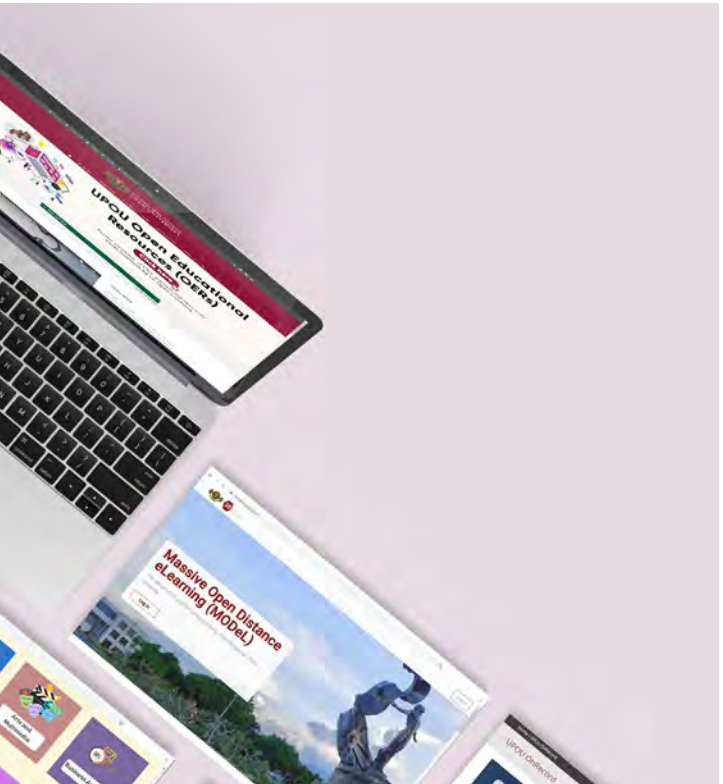
As evidenced by the historical account of DE in the country, it can be concluded that the delivery system is very much influenced by the advancements in the information and communication technologies including the shift from analogue to digital. Hence, from print and correspondence, television and radio to online learning with the penetration of the Internet and mobile gadgets across socio-economic classes, the delivery of instruction also followed the same pathway. Beyond the influence of these ICTs, the following can also be highlighted for the Philippine experience.

1. The necessity to deliver and make available learner support services to all students wherever they are became the initial driving force for DE to become online. The instructional content was the last to be digitally transformed, as per UPOU's experience, which can be attributed to the fact that there were many learners who preferred their course module to be in the printed format and also the state of the internet connectivity in many areas of the country which made it difficult to download large files from the Internet. Learning packages were made redundant in terms of being available in both the digital and printed format.
2. The change in the delivery system also has a corresponding change in the role and functions of the teacher. The roles of the teacher and the tutor which were distinct during the early years of DE in the country became blurred with the implementation of online learning. From course materials preparation, which was primarily printed during the early years to the resource-based model of preparing course packages which rely heavily on the materials from the Internet became the norm for UPOU. With the online delivery system, the teacher has to assume other roles in addition to the usual pedagogical role. These additional roles include social role to foster a friendly and social environment and help learners connect with one another, and the technological role to enable the students to use the different tools and platforms to facilitate learning. While the other teacher roles like the pedagogical and managerial roles are also being done in the conventional instruction, their concretization is very much different in an online environment. The managerial role for instance would require knowledge and skills in an e-classroom management and delivering instructional content and motivating and engaging students would also be different in online learning.
3. The technologies associated with the delivery system also made an impact on the organizational structure of the academic institution as well as in the administrative processes and procedures. One example that can be cited here is the changing role of the learning centers in the overall configuration of DE in the country. Another component also emerged in the organizational structure, the Testing Centers, which have to be identified within and outside the country. In this instance, the embassies, consular offices, alumni of the university and other partner organizations became important as they were tapped either as Testing Centers or proctors for the students based outside the country.



University of the Philippines Open University (UPOU)

4. The modern ICTs, specifically the Internet, also heralded the various forms of open education practices and as such further pushed the frontier of inclusive education. Initiatives in the form of OERs, MOOCs, open journal and open books became major components of delivering DE programs and courses to all types of learners. This included mobile learning in consideration of the proliferation of mobile gadgets in the country. This necessitated the design of online courses to make them accessible using mobile devices.
5. The mode of delivery system also resulted in the convergence of the major functions of the university such that the mode of instruction, especially the innovations being introduced, became the subject of research to contribute to the continuous building of knowledge on open and distance elearning. Public service, like training programs, is also being done through open online learning.



MOOCs AND OTHER OPEN EDUCATION PRACTICES

DE is a mode of instructional delivery which enables learners to study and complete a course or an academic degree without having to be physically present in the campus or university. This is one barrier to access to education removed and can be considered as one step towards openness. Adopting the contextualization of open education by Bates (2015), open education can take many forms and formats which include education for all, open access to courses and programs, open educational resources, open textbooks, open research, and open data.

The discourse about openness and attempts to offer open online courses started at UPOU at about the same time as online learning in 2001. Following are the significant milestones in UPOU's journey towards openness which can probably simulate the Philippine DE journey towards openness.

- During the early 2000 (between 2001-2004), a non-credit online course titled Online Teaching and Learning was offered by UPOU with the goal of training faculty members on online teaching. The course was initially offered to the faculty members of the University of the Philippines. It should be noted that it was the period that UPOU initiated online teaching and learning in its DE delivery system and many of its faculty members were based in the other Constituent Units of the University of the Philippines, hence the necessity of this training program. The initial offering registered more than 100 learners. Although it was not completely open in the sense

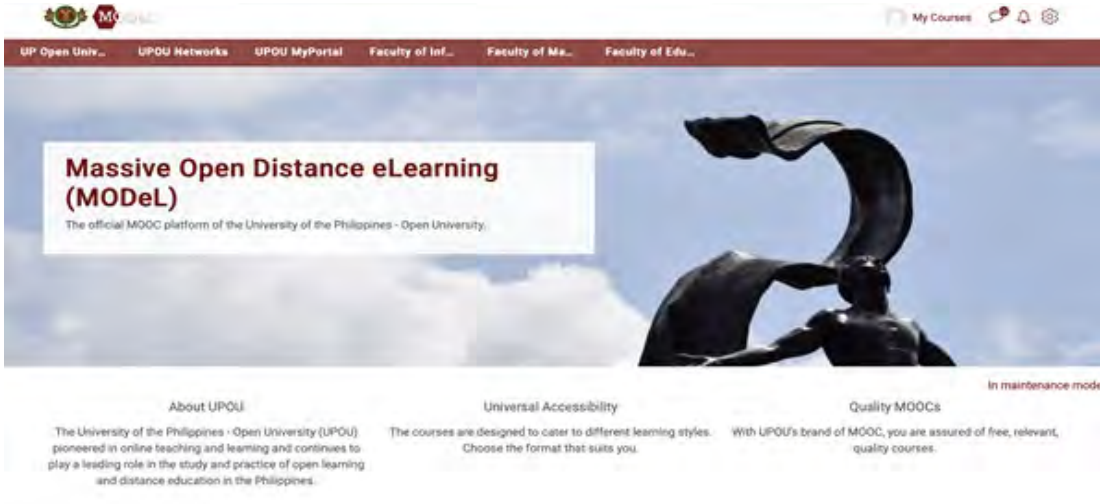
that the target learners were limited, still, this course can be considered as the beginning of the University's journey towards openness. That experience also provided an overview of the attrition rate in a free online course which was observed to be significantly higher than the credit online courses that the UPOU was offering at that time.

- In 2007, an open online course "Computer Ethics" was offered by the Faculty of Information and Communication Studies (FICS) of UPOU with the Cyber Corridor Employees or those working in the IT sector as the target learners. The module was part of the "Online Bridging Program" (OBP) that UPOU planned to offer. There were two other modules in the program: the "Social Impacts of ICT" and "Intellectual Property Rights" but these modules were not offered due to lack of funding. The openness integrated into the initiative included open learning schedule since it did not follow the usual semestral schedule. The learner can enroll anytime and may complete the program at his/her own pace anytime between three months to one year on a part time basis. Sessions were asynchronous and the student can log into the course site anytime of the day or any day of the week. Further, the learner may take the assessment tests at his/her own chosen time. In this offering, a total of 100 students registered for the course with support coming from the Commission on Higher Education (CHED) (Flor, 2007). A very useful insight from this initiative was on the open-ended schedule of the course with just a small number of learners who were able to take the final examination.
- In 2012, a series of Round Table Discussions focusing on UPOU's openness (or the lack of it) was conducted (Arinto, 2013). It was both a reflection of the university's initiatives and concretization of openness as well as a search for the direction that the university can take relevant to its mandate. Resource person within and outside the University of the Philippines System were invited to share insights on the different aspects of open education.
- In 2012, the uLearn project was implemented which became the driver for the conceptualization, development, and offering of the open online courses at the university adopting the framework of the Massive Open Online Courses (MOOCs) which was popular at that time. Through this project, the first open online course in the configuration of MOOC was offered in July 2013 under the partnership of UPOU and one of the leading mobile service providers of the country, SMART Telecommunications. The MOOC was titled "Introduction to Android App Development" and the LMS used was called @ral which was powered by moodle. This initiative became the pioneering work by UPOU on open education as articulated by Bates (2015) and also served as a template which shaped the succeeding offerings of MOOCs by the university. The template has the following features: use of OERs, as much as possible those developed by the University, to provide the content of the course; use of open platform for its

LMS; licensing the whole course under the Creative Commons system; and partnership with a major industry for the courses to respond to the knowledge and skills needs of the industry. As implied, 2012 also started UPOU's extensive production of its own open educational resources (OERs) as materials for the credit courses the university offers and to provide the content for the MOOCs it is developing.

- With the initial experience of developing and offering MOOCs, UPOU also held in 2014 MOOCathon or the unending conversation about the UPOU MOOCs. The focus of the discussion was on the LMS for UPOU MOOCs. This resulted in the change of the MOOC LMS from @ ral to model (Massive Open Distance eLearning). The learning platform was also powered by Moodle and is still being used up to the present. It can be accessed at https://model.upou.edu.ph (Figure 3). The model LMS also aligns with the university's articulation of what it does: open learning; DE; and e-learning which implies the integration of the internet/ modern ICTs into the DE framework to differentiate it from elearning integrated into the conventional or residential mode of instruction.
- In the same year, 2014, and using the model platform, another set of MOOCs, on Service Management Program, was offered by UPOU with funding from the Asian Development Bank. These MOOCs, aside from adopting the UPOU MOOC model of 2012, also have the following features: aligning the content of the OERs produced with the content of credit courses offered by the Higher Education Institutions (HEIs) of the country; and designing MOOCs to correspond to the content of the credit courses to facilitate the crediting of MOOCs towards a degree program which was one of the major concerns at that time. The idea was to increase the acceptability of MOOCs and also to lower the cost of higher education through the open courses and contribute towards making higher education more accessible and inclusive. A MOOC was designed to be equivalent to one credit unit in terms of content. Usually, credit courses in the Philippines at tertiary level carry 3 credit units, hence one course is equivalent to three MOOCs. This initiative started the advocacy of "MOOCs as OERs" where students enrolled in the credit course offered by the HEI can be enrolled in the equivalent MOOCs and learn the content together with the other MOOC learners. The teacher can opt to provide the additional assessment to validate the learnings of the students from the MOOC. In this project, the five (5) courses under the Service Management Program, recognized as cognate for some degree programs became the basis for the content of the OERs and MOOCs. There were15 MOOCs developed and offered in partnership with the IT Business Process Association of the Philippines (IT-BPAP). These MOOCs were also designed to provide pool of manpower for the Business Process Outsourcing (BPO) industry in the country.

Figure 3
Screenshot of the LMS for MOOC of UPOU



- In 2015, in partnership with UNICEF-Philippines, another set of MOOCs was offered focusing on Child Rights Protection and Promotion. A total of eight (8) MOOCs were developed from this initiative which drew enrollees from different professions dealing with children. Also, in 2015, MOOCs aimed at providing training opportunities for teachers on teaching online were also developed and offered to perform the University's mandate under RA10650 also known as Open Distance Learning Act,
- In the same year, 2015, UPOU also started publishing its open journal, the International Journal on Open and Distance eLearning (IJODeL) as one of its articulations of the open education practices.
- In 2017, the UPOU started offering the MOOC (or MODEL) Certification programs, which are actually three or four related MOOCs put together to provide a specific set of knowledge and skills. Among the initial certification programs offered were on Open and Distance elearning (ODeL) for Teachers; ODeL for Administrators; and ODeL for Technology Personnel (Figure 4). The MOOC/ MODEL Certification programs have the following features: a MOOC Certificate of Completion for each module completed, and the MOOC Certification for the general skills and knowledge learned for the set of MOOC modules under the certification program. For instance, a MOOC Certification on ODeL for teachers comprised four (4) modules/MOOCs: (1) Theoretical underpinnings and models of ODeL; (2) Designing Learning in ODeL; (3) Course Materials Development for ODeL; and (4) Assessment in ODeL. For each module completed, the learner gets the Certificate of Module Completion and after completing the four modules

and the capstone requirement for the Certification program (e.g. Reentry Action Plan), the learner will get the Certification on Open Distance eLearning for Teachers.

Figure 4
Screenshot of the list of UPOU's MOOC Certification Programs (https://model.upou.edu.ph)

MOOC categories & certification series

- ODeL Teacher Accreditation
- Technology for Teaching and Learning
- Child Rights Protection and Promotion
- Sustainable Development
- OU Pahinungód Programs
- UPOU Multimedia Center Online Training Programs
- UPOU-CHED Training Programs for HEI Teachers
- Kahandaan, Kasanayan at Kaalaman: Bridge Program
- UPOU Initiatives
- MOOC Offerings with UPOU Partners

RESEARCH IN DE IN THE PHILIPPINES

Research documents can be artifacts of the academic institution's activities and focus on certain stages of its history. A total of 87 research papers from 2002 to 2020 were evaluated to look at the trends of DE in the Philippines based on the research conducted. The research papers evaluated were those published in DE journals like the Asian Association of Open Universities Journal (AAOUJ), the International Review of Research in Open and Distance Learning (IRRODL), the ASEAN Journal of Open and Distance Learning (AJODL), the International Journal of Open Distance eLearning (IJODeL); conference proceedings; papers uploaded in the academia and google scholar pages of the senior academics of UPOU (Table 1).

Table 1
DE Research in the Philippines, 2002-2020

Year	# Papers Evaluated	Highlights
2002	3	Focus on the technologies effect on providing support services to the learners like tutoring; looking at how E-learning affect the students
2003	3	Online tutorial support; satisfaction of learners;
2004	2	Quality in E-learning; support system
2005	4	E-learning for development; E-learning in 3rd world country; ICT in the office processes (OUR)
2006	0	
2007	5	Reflection on the experience of ICT in education; support services; teachers experience
2008	0	
2009	4	Global learning communities; reflecting on the experience of online teaching; changing profile of learners

Year	# Papers Evaluated	Highlights
2010	1	Co-creating knowledge
2011	8	Tutors/learner support services; quality of education; human capacity development through E-learning; marginalized communities/ learners; virtual learning communities
2012	7	Informal learning communities and geospatial distribution of learners (for learner support); use of video materials; knowledge sharing and collaborative learning (in online learning environment)
2013	6	Other online systems for students' processes; online teaching; collaboration among learners; Massive Open Online Courses (MOOC)
2014	4	Articulation of openness; teaching online; MOOC
2015	11	MOOCs; OERs; social media; online collaboration among learners; students' behavior in the online learning platform
2016	6	Multimedia courseware for authentic learning; OERs; Open distance E-learning framework in teaching, research, and extension
2017	6	OERs; Open Education Practices (OEP); social media; transforming learning centers
2018	11	Online collaborative learning; OERs; MOOCs; technology for community building
2019	2	Peer assessment; MOOCs
2020	4	Online collaboration among learners; MOOCs; Universal Design for Learning (UDL) in ODeL

Looking at the focus of research from 2002 to 2020, the following trends can be drawn.

1. Effect on students of online learning. From 2002-2007, considered to be the transition period to becoming fully online, most of the research conducted were on the online tutorial system and looking at the effect of online learning on the students. This is also indicative of which process at the university became online first, the tutorial system. During the period, quality of instruction was already investigated in the context of ICT integration. There were also some reflection papers on the part of the

teachers who first engaged in online teaching.

2. From 2009-2012, learning communities became a subject of research which implies the proliferation of student-formed online communities. Using the ICT-enabled platform, specifically the Web2.0, students became connected with each other and socialization among them also became possible. The phenomenon of online learning communities was also investigated from the perspective of peer support and addressing the sense of belongingness which is a major concern among DE students. The integration of modern ICTs into the DE system also prompted an investigation of the profile of learners enrolled in the DE programs with the conclusion that, indeed, the profile has changed during the 10 years of DE in the country.
3. From 2013 onwards, many research papers that were published and presented in the conferences tackled the open education initiatives like Open Educational Resources (OERs) and Massive Open Online Courses (MOOCs). This also implies that this was the period of a major change in the DE framework in the country with its shift to openness.
4. From 2015, social media became the subject of research probably because of the increasing engagement among learners using the social media platforms. Although Facebook launched its Philippine office only in April 2016, at that time, there were already 49 million Filipinos on the social networking site, 44 million of whom were accessing it using mobile devices (Inquirer.net, 2020).
5. Together with the research on open education practices, universal access to learning also became a subject of research which resulted to a publication on Universal Design for Learning in the context of online learning in 2020.

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Universitas Terbuka (UT)

08

08

Universitas Terbuka: Making Higher Education Open to All

Rahmat Budiman, Durri Andriani, Adhi Susilo, Lidwina Sri Ardiasih, Made Yudhi Setiani, Mery Noviyanti, Olivia Idrus, and Ernik Yuliana

Universitas Terbuka

ESTABLISHMENT

The earliest distance education in Indonesia began in the 1950s and was known as the Education Radio Program and the correspondence training program for teachers seeking the required teaching degree (Belawati and Bandalaria, 2018). Over 30 years later, Universitas Terbuka (UT) was founded in 1984 and replaced the correspondence course type. For over 20 years, UT was the only university recognized by the government to provide higher education through distance education system. A higher Education Decree in 2001 marked the regulation change and allowed all higher education institutions to also employ distance learning systems. Nevertheless, UT remained the only university operating as a single-mode institution, taking full advantage of its open and distance education (ODE) system. Among the other universities that are offering significant e-learning as parts of their teaching methodologies are the University of Indonesia, Gajah Mada University, and Bina Nusantara University

Universitas Terbuka was established as an open university fully applying ODE system to increase the qualification of in-service teachers and to expand access for higher education in Indonesia.

(Belawati and Bandalaria, 2018). The first two are public universities while the third one is a private university. However, as a result of the COVID-19 pandemic, other institutions have now begun offering online distance learning courses at a considerable level.

Universitas Terbuka was established on September 4th,1984 and launched by the President of Indonesia as an open university fully applying ODE system. UT was founded with two specific mandates, which are to increase the qualification of in-service teachers and to expand access for higher education in Indonesia. By the year 2019, the university offered more than 43 study programs attended by more than 350.000 students, which secured UT to be in the list of Mega Universities of the world (Belawati and Bandalaria, 2018). UT students' profile was initially dominated by practicing teachers and working adults but has in the past several years changed toward younger adults with various professions.

Increasing teachers' qualification was considered very important as the Government believes that the key element to improve education quality was through the enhancement of teacher quality. The fact that there were both a shortage in the number of teachers and uneven distribution of teachers throughout Indonesia forced the Government to look for an upgrading system that would not require them to leave their teaching duties at schools. The option was to establish a distance education institution to provide mass-education for upgrading the qualification of those practicing teachers. This is the mandate that was given by the Government to UT since its inception, forming the Faculty of Education and Teacher Training (FKIP). FKIP was and still is dedicated only admits practicing in-service teachers as its students.

Expanding access to higher education is another important and strategic issue for the Government of Indonesia. Therefore, to open a wider opportunity for high school

graduates who aspire for further higher education, UT developed three other faculties, namely Faculty of Economics (FE), Faculty of Mathematics and Natural Science (later changed to Faculty of Science and Technology or FST), and Faculty of Social dan Political Sciences (later on changed to Faculty of Law, Social and Political Sciences or FLSPS). These three Faculties are open to any prospective students from any background as long as they graduate from high school levels.

As an open university, UT has an open admission policy: no selection test nor age limitation (including the year of high school completion time), and no time limit for completion. UT also adopts a 'multi-entry & multi-exit' policy as well as recognizes 'prior learning', which gives high flexibility to students to pursue their education in accordance with their circumstances. UT's vision and mission today responds to the UN Sustainable Development Goals (SDGs), particularly SDG4, which addresses Education and Lifelong Learning.

UT was also designed by the Government to collaborate with other universities and educational establishment in Indonesia. This is to allow UT accepts and provides services to students in all provinces throughout the country. At the beginning, UT operations involved 27 Regional Offices (ROs) better known as *Unit Program Belajar Jarak Jauh* (UPBJJ), which were located within the campus of state universities. The collaboration was required to enhanced UT's acceptance in society and especially in academic milieu. Those state universities provided not only buildings and human resources as the Heads of ROs, but also allowed UT to involve their lecturers to develop course and examination materials, as well as to become tutors. In its development, the nature of the collaboration with universities changed dynamically in line with the changes in various factors including the government regulations and UT's increased capacity to be more independent. Over the years, the locations of ROs move outside university campuses and Heads of ROs gradually replaced with UT's internal human resources. UT's collaborations for course and examination authors, as well as tutors however remain continuing until present time. Many universities believe that by allowing their lectures to help UT, they also gain advantages. One of the advantages is that as the lecturers received training from UT on how to design instructions, to write a course, to write good assessment items, and to become tutors, they become better lecturers for their own teaching in their respective universities.

PLANNING AND DEVELOPMENT

Establishing Identity

In 1998, UT released the 1998–2008 UT Development Plan, which formulated a clear vision to become a center of excellence in organizing, researching, developing, and disseminating information on ODE in Indonesia. In 2001, UT launched a bureaucratic reform, which included raising the quality of academic products, providing work facilities and infrastructure, and continually strengthening cooperation with diverse parties. The mandate compelled UT to transform into a teaching institution that provided academic services to all citizens of the Republic of Indonesia, including those residing in the country's most remote, underdeveloped, and impoverished areas, as well as those living abroad. As a teaching institution, UT was required to increase its quality and reputation in all areas, including human resources, community and market-driven educational programs, both degree and certificate programs, the quality of teaching materials, learning processes, research, and assessment. As a result, UT pushed itself to become a distance education institution with world-class academic services.

As a world-class distance teaching university, UT always strives for innovation taking advantage of the latest technological development. It is very important for UT to establish a reputation as a modern university and be recognized as a university that opens up access to higher education and lifelong learning to all. In fact, UT's popular slogan is "making higher education open to all". Recently, UT's identity has also been associated with the recognition as a cyber university. And, as the result of UT's significant contribution to assist the praxis of online learning by other universities during the Covid 19 pandemic, UT has transformed itself to become a Center of Innovation (CoI) for distance education. As a CoI, organizational culture was challenged to become a learning organization that triggered the birth of new ideas and breakthroughs in the concept and implementation of distance education by utilizing the latest developments in information and communication technology.

Enhancing Quality and Positioning

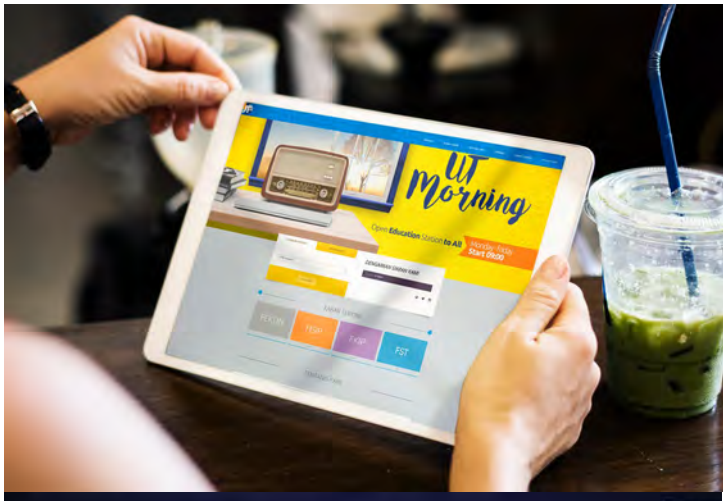
UT's planning and development policies are aimed at enhancing quality, which are projected into three main areas, e.g. (1) improving academic quality, (2) improving internal management, and (3) increasing student participation rates. The latest long-term plan is formulated at the Business Strategic Plan 2021-2035, which is further elaborated by the annual working plans to achieve the stated annual targets articulated in forms of key performance indicators. The university annual work plan contains the entire plan of UT's programs and activities for the year. Each Unit/Department is then required to create its own annual plan in accordance with its roles and functions. The achievement of UT's annual key performance indicators is monitored and evaluated by the Ministry of Education, Culture, Research, and Technology.

Upon the achievement of opening up access to higher education to all Indonesians, as stated in the Business Strategic Plan 2021-2035, UT envisions itself to have a bigger role in Indonesian higher education system through the following steps.

1. In 2020: becoming a leading institution in innovation of distance higher education.
2. By 2025: promoting the integration of all educational services in the cyber university networks.
3. By 2030: realizing a digital education ecosystem for Indonesia.
4. By 2035: UT is supported by a solid digital education ecosystem.

Future Challenges and Directions

The milestones set in the Business Strategic Plan 2021-2035 are envisaged to elevate UT's contribution to the Indonesian higher education provision. As the proponent of ODE in Indonesia, UT is expected by the Government and the people to play a bigger role in achieving higher rates of higher education participation. Currently, the higher education participation rate is at around 34% and the Government wants to increase it to 50% by 2045. Therefore, a new challenge has been put forward by the Ministry of Education, Culture, Research, and Technology, which is assist other universities applying online learning by providing essential guidance and e-learning facilities to support the teaching and learning process. The digital education ecosystem would allow UT to respond to the challenge.



Meanwhile, UT's strategic environment is also facing dynamic development. The implementation of the ASEAN Economic Community agreement, the development of advanced information technology, globalization, and changes in government policies, forces UT to have a high level of anticipation, adaptability, and flexibility. UT must be able to respond to the changing demands of society and dynamics of environment by continuously enhancing the relevance of its educational programs and services using the state-of-the-art technology. However, UT also must provide quality higher education at an affordable level to all society. In a situation like this, UT is required to have an ability to find various sources of income and utilize them efficiently for optimal education services.

Organizationally, UT had a significant change in 2011. Through a Decree of the Minister of Finance No. 268/ KMK.05 /2011, UT's status changed from a 'regular' state university to become a state university with a 'public service agency' (Badan Layanan Umum – BLU) status known as PTN-BLU. This change is very essential to UT. As a public service agency, UT can directly use its revenue without having to deposit it in the state treasury first, even though it is still categorized as state revenue. Thus, UT can be more flexible in managing the use of funds in accordance with operational needs to support quality learning. UT is currently preparing the transformation again from the status of PTN-BLU to State University with Legal Entities (known as PTNBH). As a PTNBH, UT would have a full autonomy in both academic and non-academic affairs. One of the most significant differences is that as PTNBH, UT's revenue will no longer be categorized as the state revenue, and thus UT will have complete autonomy in managing the financial affairs as is any non-governmental institutions. This change will dramatically allow UT to develop its existing potentials and to provide better services. Financial autonomy would also allow UT to explore and capitalize on the latest technology for its system and operations. As well all understand, technology is the key element to the current and future educational provision. With technology, UT will be able to achieve its milestones and to realize its vision effectively and efficiently. As a consequence, such autonomy would of course need to be implemented with increased transparency and accountability.

MANAGEMENT

Organizational Structure

UT has a headquarter in the capital city of Jakarta and 39 ROs spread throughout Indonesia (Figure 1). To support the new PTNBH status, UT's organizational structure needed also to be updated, and it is now still in the making process. The current organizational structure is the one officiated by the Decree of Minister of Research, Technology, and Higher Education of Indonesia No. 16, 2017Juncto Decree of Minister of Research, Technology, and Higher Education of Indonesia No. 84 of 2017 which lays out the statutes of the university as well as the organizational structure. In implementation, some additional working units were added to the official organizational structure in line with UT needs.

Figure 1
Universitas Terbuka's Regional Offices

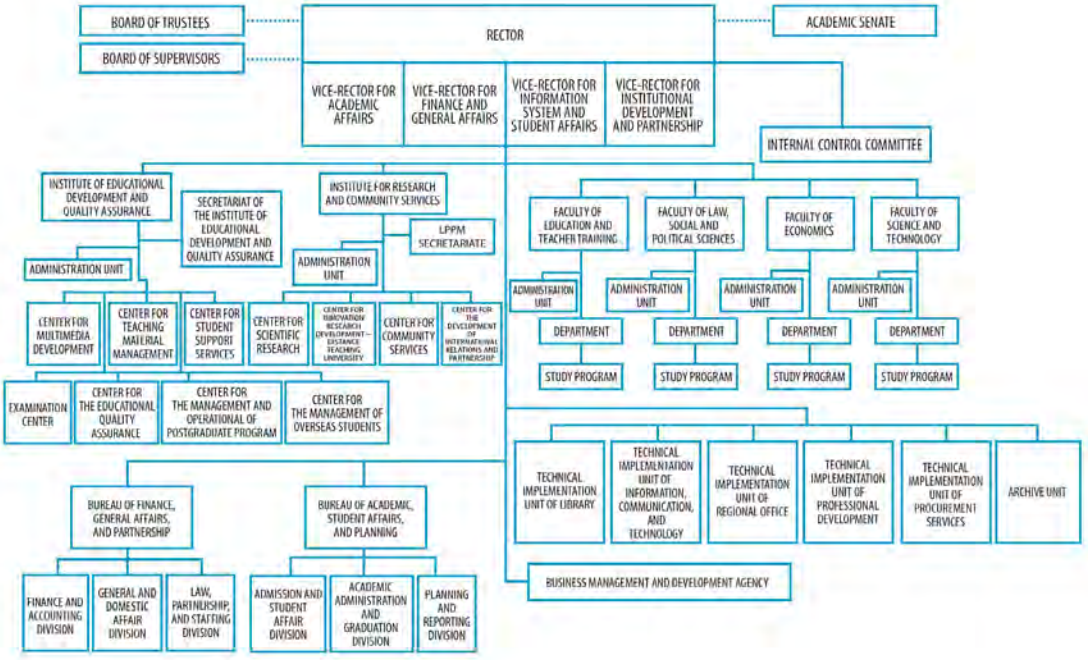
As shown by Figure 2, there are four main bodies in UT's structure: (1) the Academic Senate, (2) Rector, (3) Internal Supervisory Unit, and (4) Board of Trustee. As a BLU, UT also has an External Supervisory Board which oversees UT's program and financial accountability. UT has four faculties, namely the Faculty of Economics, the Faculty of Law, Social and Political Sciences, the Faculty of Education and Teacher Training, and the Faculty of Science and Technology. UT also has two institutions, namely the Institute for Educational Quality Development and Assurance and the Institute for Research and Community Services. Administrative supports are performed by two Bureaus (namely the Bureau of Finance, General Administration, and Cooperation, as well as the Bureau of Academic, Student Affairs, and Planning) and four technical units (namely the units of Information and Communication Technology, information services/library, Human Resource Professional Development, the Archive). Most importantly, the backbone of UT's operations in the regions are the 39 Regional Offices (RO) that spread throughout the country.

Academic and Administrative Affairs

Admission and Registration. Admission and first registration can be done either online or in person in the RO. Every registered student will automatically receive an official email address (ecampus.ut.ac.id), username and password. Students are expected to use the official university email address for their communication regarding their learning at UT. Course registration can be done throughout the year and students can access all their academic records at https://sia.ut.ac.id/

Academic Programs. UT offers both degree and non-degree educational programs. In 2021, UT offers a total of 43 degree programs: two diploma programs, 32 bachelor programs, seven master programs, and two doctoral programs. For non-degree programs (certificate programs), UT offers continuing professional development programs, and course-based independent study (where general public can register for individual courses without admission process). UT also offers several massive open online courses (MOOCs) as part of community service activities. The general instructional system is designed where students study the learning materials independently, participate in tutorials, complete course assignments, and take the course final examinations. The academic year is designed semester based, and students have the flexibility to take time off from their study at any time.

Figure 2
Universitas Terbuka's Organizational Structure



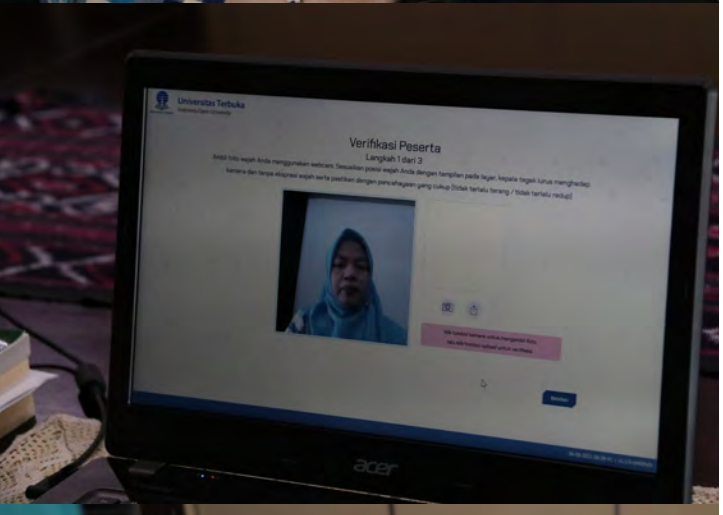
Learning Materials. Learning materials better known as Modules are the main learning medium which are produced and distributed in both printed and digital form. UT's modules are designed to be self-instructional and self-contained, which mean that the modules are comprehensive in accordance with the curriculum and can be studied by students independently. In addition, UT also develops and provide students with various supplementary materials in form of audio, video, animation, as well as television and radio programs. The latest form of UT modules is the interactive digital books, where the modules are enriched with multimedia (video, animation, simulation).

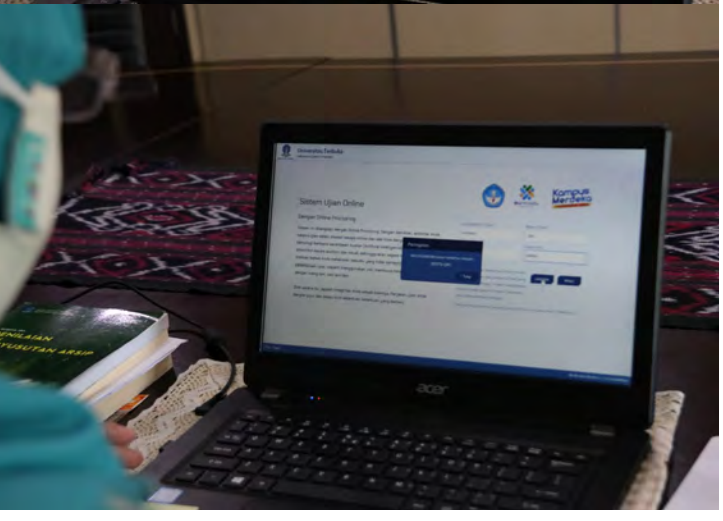
To maintain the relevance and novelty, UT has the policy of revising and updating the modules at least every five years. UT's digital learning materials can be accessed and can be downloaded using various devices such as smart phones/tablets or laptops so that students can read them offline. The access and download of the digital modules can be done through the website at http://bahanajar.ut.ac.id/ or through the "BA Digital Open University" application, which can be downloaded on Google Playstore. Modules are also available in the virtual reading room at the university digital library at https://pustaka.ut.ac.id/lib/.

Student Support Services. Students would receive support services from the beginning of joining UT until they graduate. New students would receive a package of orientation package and a full-day face-to-face orientation programs (replaced with videoconferencing during the Covid-19 pandemic). During they study at UT, they can consult and interact with UT's staff in the RO, by either face-to-face meeting or online. UT also establishes a contact center known as 'Hallo UT' that can be contacted 24 hours using a trackable ticket-based email system and a telephone number at 1500024. Periodically UT also organizes various workshops and clinics to enhance student's capacity and skills in conducting distance learning.

Learning Support Services. Tutorial is the main learning support for students. All courses are accompanied by online tutorials, and each course can have more than one online tutorial (known as Tuton) class. Tuton can be accessed at https://elearning.ut.ac.id. Several courses (especially those of the Bachelor Program for upgrading the Elementary School Teachers– S1 PGSD), due to the spread of the students in more rural areas where internet infrastructure is not yet adequate, are supplemented by face-to-face tutorials (known as TTM). TTM is organized by ROs in cities closed to the domicile of the the students. During the Covid-19 Pandemic, all face-to-face tutorials are replaced by video conferencing (known as TUWEB) where students can participate with simple device such as handphone.

Practical Works/Practicum. Some courses that require practical works or practicum. Practical works or practicum allows students to have hands-on experiences and perform the required skills. UT has established long and strong collaborations with various institutions (universities, schools, training centers, etc) which have laboratory and workshop facilities to accommodate students do their practical works in their nearest location. Currently, UT has 106 courses that need practical works /practicum. In the situation of the Covid-19 pandemic, the policy that UT applies is following the Government's Covid-19 preventive health protocol standards, where online practicum (Praton) is used whenever possible.





Course Examination. The default system of course final examination (known as ujian akhir semester or UAS) is pencil and paper test, which is face-to-face in examination locations throughout the country. The second examination is a paid online examination where students can take it either from the ROs or from other locations of their choice (upon approval and meeting certain requirements) with semi and full online proctoring system. UT has developed an item bank system that has a collection of 6-10 sets of test item for each course. Therefore, UT is able to administer examination simultaneously in various locations using unique and distinctive set of examination items to prevent the possibility of cheating created by differences in students' time zones. During the Covid-19 pandemic, UAS was conducted through open book take home examinations (THE) method. Students can do THE anywhere, as long as there is internet access, by downloading the UAS THE documents, complete the THE within the allocated time (about 6 hours per course), and uploading their responses before the deadline. THE is implemented while adhering to and upholding applicable academic integrity.

Community Services. As a university, community service is one of the three pillars of all Indonesian higher education institutions: teaching and learning, research, and community services. UT's community services can be categorized as nation-wide community services and local community services performed by individual lecturers in various disciplines and programs throughout the country. The nation-wide community service mostly done online by opening up UT's various academic products (books, journals, enrichment materials, videos/UT-TV, etc) as open educational resourses (OERs) through a dedicated OER website called Sumber Pembelajaran Terbuka (SUAKA) at https://www.ut.ac.id/OER/, offering MOOCs (at http://moocs.ut.ac.id/), and organizing open webinar in various subject matters. The local community services mostly in the field relevant to the lecturer's field and expertise and in accordance with the local community needs.

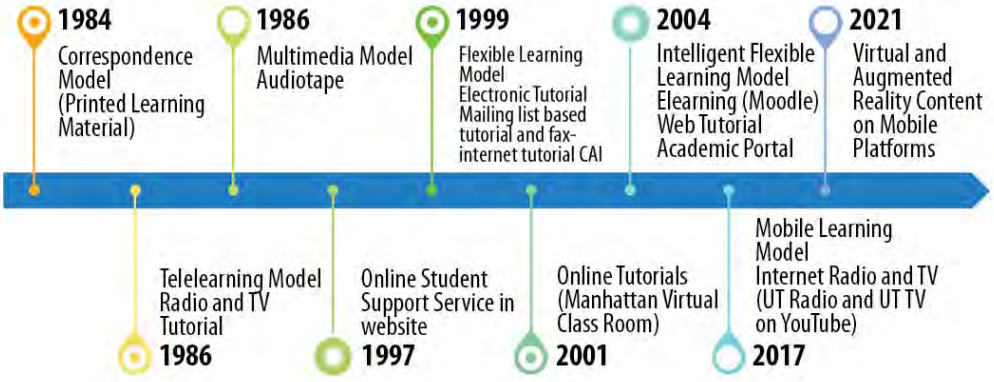
DELIVERY SYSTEM AND TECHNOLOGY USE IN UNIVERSITAS TERBUKA

Open education is a concept of opening educational access to all, which is based on the acceptance that education and knowledge are public goods and that everyone has the right to access quality education (Belawati, 2014). As previously mentioned, UT was founded to implement the open education concept as stated in the objectives of UT's establishment: (1) to provide expansive opportunity for Indonesian citizens and foreigners, wherever their place of residence, to attain higher education, (2) to provide higher education services for those who, because of their work or due to other reasons, are not able to further their education in face-to-face higher education institutions, and (3) to develop academic and professional programs to satisfy the national development needs that are unaddressed by other universities.

As an open university that was conceptualized during the pre-internet era, UT's delivery system was initially based on the independent learning approach. Following the model from the United Kingdom Open University (UKOU), UT delivery system is relying on the pre-produced learning material packages, face-to-face tutorials, and examination. UT students are expected to learn independently using the main course materials (modules) and watch the television programs aired by the national television broadcast. Students were also obliged to attend face-to-face tutorials, which soon to be found unpopular for certain courses. The face-to-face tutorials were then only provided for certain courses with high difficulty level and on-demand basis. As technology developing and became available, other media such as audio, video, animation, and later even interactive digital materials are developed. The main course materials or modules are gradually converted into interactive digital e-books that contain text integrative with still images, video, animations, etc. Figure 3 shows the milestones of UT's learning materials in relation to the technology use evolution.

Figure 3 also highlights the changing technology use for student and learning support services. The era of online learning system at UT started in 1997 when UT introduced online student support services through its website. Following up this initiative, UT began to develop a more expansive web-based learning support systems including those registration, tutorials, and examinations. Even though information and communication technology (ICT) infrastructure was very limited and unevenly distributed, UT continues to exploit the possibility of using ICT to enhance both administrative and academic services to its students. At present, as the figure shows, UT is in the initial stage of utilizing the latest technology such as augmented and virtual reality/extended reality for delivering the academic content. The latest discussions among faculties at present are around the idea of developing a metaverse of UT to enhance its virtual physical presence. Table 1 further elaborates the evolution of UT delivery system and technology use in relation to Taylor's five generations of DE.

Figure 3
Delivery System and Technology Milestones



It is also worth mentioning that as a distance learning university, UT also developed and implement mobile technology as an integral part of its online learning system. In addition to its mobile interface website, online tutorials are also made accessible through mobile as well as hand-held devices. In other words, UT students can literally study through their mobile devices from the very first activity of registering for courses, paying the tuition fee, obtaining digital learning materials, accessing the digital library, reading online journals, as well as participating in online tutorials. With the continuous development of increasingly sophisticated smartphone technologies, it is important for UT to continuously improve its online learning system. The development of UT's mobile learning, which was started in 2013, has gone through several phases (Padmo, D. & Belawati, T. & Idrus, O. & Ardiasih, L.S., 2017).

Table 1
Delivery System and Technology Use in Universitas Terbuka (modified from Pannen, 2016)

Distance Learning Model	Years	Delivery System	Technology Used
First Generation The Correspondence Model (Printed)	1984	In the beginning of UT establishment, communication between student and tutor uses correspondence via postal service.	Postal service
Second Generation The Multimedia Model • Print • Audiotape • Videotape • Computer based learning (CAI/CAL) • Interactive video	1986	UT provided audiotape as a supplement for printed modules	Audio Tape
Third Generation The Telelearning Model • Audio teleconferencing • Videoconferencing • Audio graphic Communication • Broadcast TV/ Radio and audio teleconferencing	1986	Since 1986, UT used radio for tutorials, with limited frequency. Then in 1991, radio and television tutorials became regular through the national radio station or Radio Republik Indonesia (RRI) and the national television station or Televisi Republik Indonesia (TVRI).	Radio and Television Transmission/ Broadcasting Systems

Distance Learning Model	Years	Delivery System	Technology Used
Fourth Generation The Flexible Learning Model • Interactive multimedia (IMM) online • Internet-based access to WWW resources • Computer mediated communication (CMC)	1999	UT started the internet-based access to www resources in 1997, however the mailing-list based tutorials were started in 1999. The mailing-list based tutorials (known as electronic tutorial or Tutel) were conducted on course basis, i.e. each course was offered through a specific mailing-list account In 2001, UT started to offer online tutorial using open-sourced learning management system (LMS) called Manhattan Virtual Classroom or (MVC), and in 2004, UT changed to Moodle until now	Internet: mailing list, mail gateway, web-based LMS
Fifth Generation The Intelligent Flexible Learning Model • Interactive multimedia (IMM) online • Internet based access to WWW resources • Computer mediated communication (CMC) using automated response systems • Campus portal access to institutional processes and resources	2004	Nowadays, UT has several learning materials to support the printed modules as main source of learning and implemented the fifth generation of media in distance learning. The media such as: • Online Tutorial using moodle based application • Webinar Tutorial using Microsoft Teams, in this tutorial there are interaction between tutor and student • UT Radio, internet streaming tutorial • UT TV, YouTube channel for delivering learning materials • However, other program still under development	Internet -based multimedia learning materials, interactive digital materials, web-based tutorials, web-based online examination system, web-based administrative systems, high speed network connection, contact center with chatbot, etc.

MOOCs AND OTHER OPEN EDUCATION PRACTICES

Since its establishment in 1984, UT has continuously embodied the spirits of "education for all" and "lifelong education", which are the philosophical foundation as well as the Indonesian government's mandate for UT. Furthermore, the development of technology and the change of educational paradigms have spawned various models of innovations in education. The definition of 'open' in open education itself has changed and nowadays is understood as also containing the concept of open access (read: free). The most phenomenal movement with regard to the notion of openness in education is related to the 'sharing paradigm', which has resulted in two globally accepted and adopted educational models: OERs dan MOOCs. As mentioned previously, in order provide the nation-wide community services through online platform, UT develops and offers OERs and MOOCs since 2014 (Belawati & Bandalaria, 2018). In 2020, UT offers 23 MOOCs which can be accessed at http://moocs.ut.ac.id and hundreds of OERs in various media formats (Figure 4). Starting from 2021, there have been some additional MOOCs, and in the future, it is planned all MOOCs are designed in the credit earning scheme.

Figure 4
The Profile of UT's MOOCs

Source: http://moocs.ut.ac.id/course/index.php?categoryid=2

UT offers two categories of MOOCs, i.e. community service MOOCs and course affiliated MOOCs . The first category refers to MOOCs which subjects are not directely related to UT's course. Certificates earned upon completion of this MOOCs category cannot be used to get credit earning at UT. The course affiliated MOOCs on the otherh hand were designed based on existing UT courses and therefore can be used for credit earning at UT through the mechanism of 'Recognition of Prior Learning' or RPL since 2020.

Table 2 presents the characteristics of each category and based on the above characteristics, there are currently 21 community service MOOCs and three course-affiliated MOOCs.

Table 2
The Differences Between Community Service and Course Affiliated MOOCs

No.	Community Service MOOCs	Course Affiliated MOOCs
1.	Coursed are decided based on popular themes/titles/materials that are solely aimed at educating the public regarding the understanding/mastery of important skills, both in the form of knowledge and practical/applied skills.	MOOCs are identified based on certain popular courses which are developed into several MOOCs according to essential competencies.
2.	No parts associated with the competences of any degree courses offered by UT	Designed to be transferable towards relevant UT's degree courses
3.	Interaction in MOOCs is minimum and without instructor guidance	Interaction in MOOCs is structured within a certain learning time
4.	Free, uncertified, and non-transferable into UT's degree courses.	Free with additional scheme for participants who wish to obtain a certificate must: (1) do assignments and take part in the evaluation of learning outcomes (exams), and be declared to have passed the course. (2) pay the examination fee according to the conditions for each MOOCs program. Once series of MOOCs in one course have been completed and each has a certificate of completion, they can be transferred to the relevant courses.

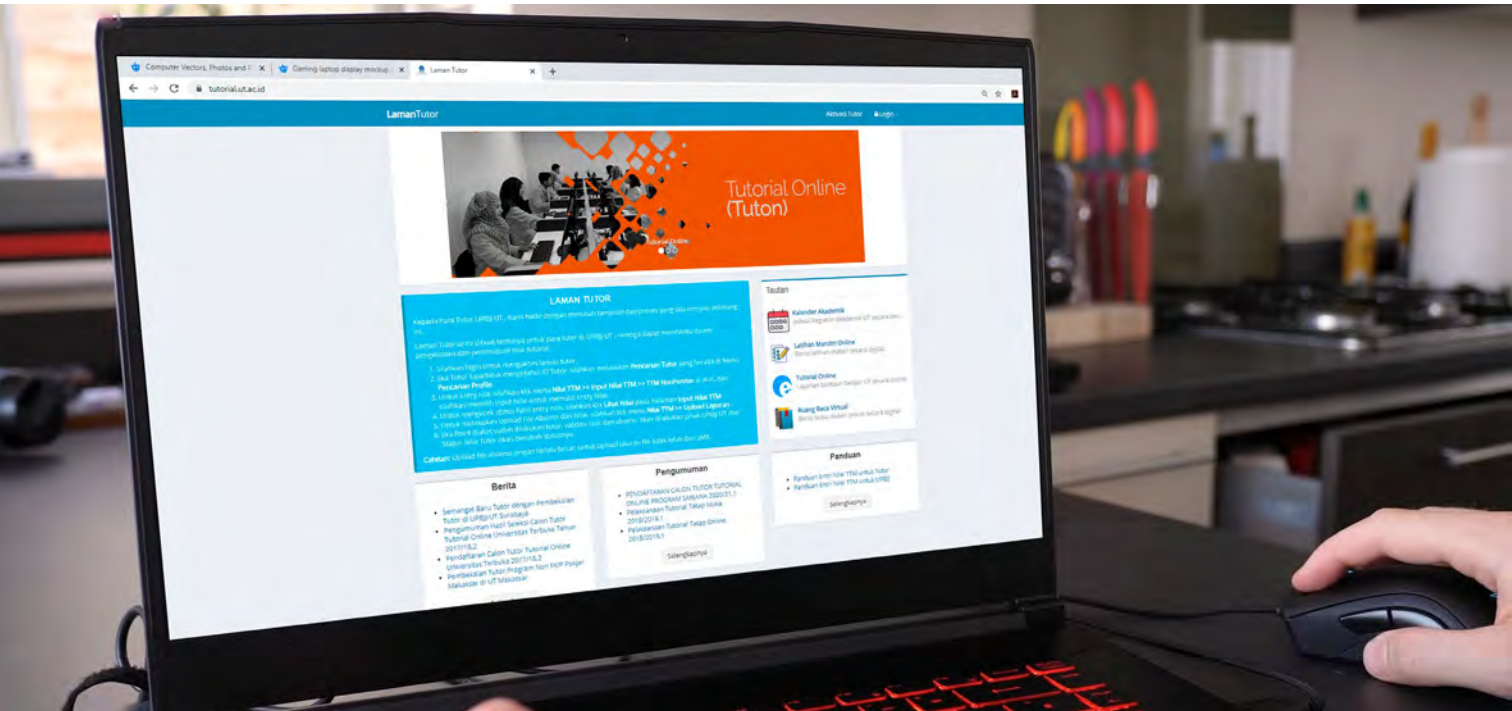
To further advocate the open education practice in Indonesia, UT with the endorsement and support of the Ministry of Education, Culture, Research and Technology has founded a consortium with other higher education institutions through UT's latest unit called the Indonesia Cyber Education Institute or ICE-Institute. Through ICE, UT is confirming its commitment to provide free and accessible university courses using MOOCs model.

Figure 5
The Homepage of ICE Institute

The ICE Institute is an online marketplace for online courses under the supervision of the Ministry for Education, Culture, Research, and Technology of Indonesia. It provides a variety of online courses from many partner universities within the consortium throughout Indonesia and overseas. The consortium of the ICE Institute is under the management of 14 founding institutions with Universitas Terbuka as the chair. Table 3 shows the name of member institutions of ICE and the providing of courses in the ICE marketplace.

Table 3
ICE Institute Consortium Members and Partners

The current members of the ICE Institute Consortium (founding institutions)	Universitas Indonesia (UI), Universitas Pelita Harapan (UPH), Universitas Terbuka (UT), Universitas Gadjah Mada (UGM), Universitas Bina Nusantara (Binus University), Universitas Negeri Jakarta (UNJ), Atmajaya Catholic University (UAJY), IPB University, Universitas Pradita, Institut Teknologi Sepuluh November (ITS), Universitas Negeri Surakarta (UNS), Telkom University, Universitas Diponegoro, and the Association of Indonesian Business and Economics Faculties (AFEBI).
Online Learning Providers	edX, Regional English Language Office (RELO) US Embassy Jakarta, Asian Development Bank, Kaliber, and Microsoft.



At present, the most interesting program from the ICE Institute is the scholarship from Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia with "Freedom Learning for All" tagline. This scholarship enables students at universities in Indonesia to choose and enrol in any free courses developed by well-known Indonesian universities and other partner institutions.

RESEARCH FINDINGS IN THE LAST FIVE YEARS

Like other universities in Indonesia, lecturers at Universitas Terbuka are obliged to conduct research. Research and Community Services at UT is coordinated by UT's Institute for Research and Community Service (*Lembaga Penelitian dan Pengabdian kepada Masyarakat,* abbreviated as LPPM). This institution has two Research Centres: Centre of Scientific Research (*Pusat Penelitian Keilmuan,* or PPK), and Centre of Research and Innovation for Open and Distance Education (*Pusat Riset dan Inovasi Pendidikan Terbuka dan Jarak Jauh* or PRI-PTJJ). The Centre of Scientific Research manages research related to all fields of knowledge in all faculties and study programs at UT, whereas the PRI-PTJJ, which was newly established in 2018, manages research specifically related to the field of open and distance learning and digital learning ecosystem.

UT has a Research Master Plan (*called* RIP), which strategically guides the flagship research topics for the next five years. With RIP, it is expected that all research would have direct and significant contributions to achieving UT's vision. All research is fully funded by either UT, the Ministry of Education, Culture, Research, and Technology, or other financial sources through competitive-based and assignment-based schemes. It is also important to mention that several lecturers also conduct research with personal funding. To illustrate UT's commitment to research, every year UT allocates a significant research budget and for the past 5 years (2016-2020) UT has allocated research budget of over IDR 80 billion. Table 4 presents the number of research conducted by UT's lecturers for the past five years categorized by funding resources, which shows that the number ranges from 250 to 430 titles.

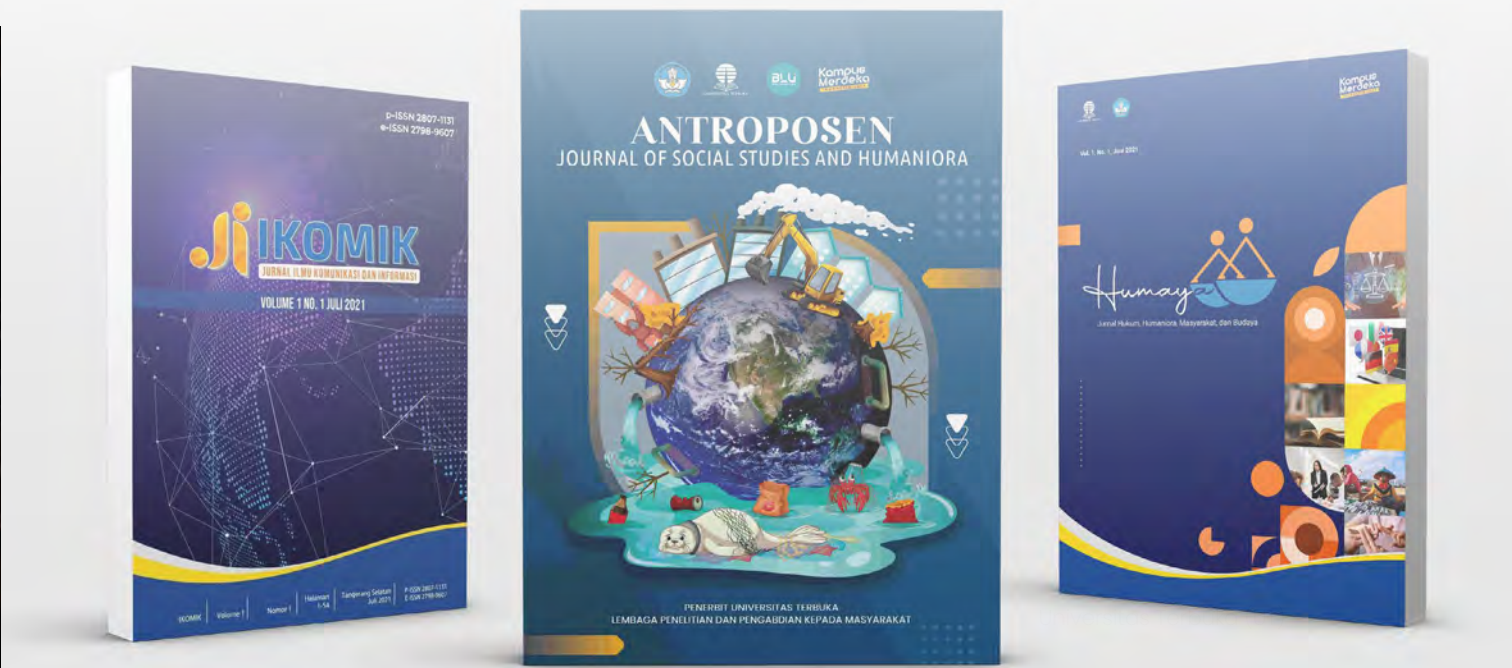


Table 4
Research Conducted by UT's Academics from 2016-2020

Research Category	2016	2017	2018	2019	2020
Funded by UT	309	283	379	414	260
Funded by the Indonesian Ministry of Education, Culture, Research, and Technology	11	7	7	1	0
Personal Funding	7	4	29	11	0
International Research Collaboration	5	4	4	4	4
Total	**332**	**298**	**419**	**430**	**264**

As mentioned, research topics are guided by the RIP and in general can be categorized into six groups: curriculum evaluation, assessment, student, learning material, learning support system, and management (of distance education). The last one is institutional research category. Table 5 shows the proportion of number of research for each category.

Table 5
Numbers of Research by Category (2016-2020)

Category	Numbers of Research	Percetages (%)
Curriculum Evaluation	29	6
Assessment	22	4
Student	66	12
Learning Material	118	22
Learning Support System	111	21
Management (in Distance Education)	188	35
Total	**534**	**100**

For each research category, UT has conducted relevant topics whose findings are beneficial for UT's continues improvement and development. The following paragraphs present highlight of major findings for each category that have been adopted and implemented by UT.

C***urriculum Evaluation***

Curriculum is at the centre of every academic program as it comprehensively formulated the programs' core competence to be achieved, the content of the learning materials, the overall plan and arrangement regarding learning process, as well as the design of the learning assessment. Curriculum is dynamic in nature as it always has to be adjusted to any changes

that come either from the subject matters themselves or from the changing policies set by the Directorate of Higher Education of Indonesia. One of the significant findings of researches on curriculum reveal that UT's curriculum need to be more updated in accordance with the latest scientific developments and stakeholders' policies such as those suggested by Ministry of Education, scientific associations or organisation, students, and alumnus (Lestari et al., 2016; Mikdar et al., 2018; Utami et al., 2017; and Windrati et al., 2016).

Assessment

Student assessment is essential for student's learning process, which is to measure the achievement of the targeted competencies. In the last five years, UT has conducted research on various development of assessment models, such as online proctoring and question and test interoperability (QTI) models (Suhartono, 2020) and test development on online exam (Santoso et al., 2018). The proctoring system is used to facilitate the ease supervision during online exams, so that examinees and exam supervisors do not have to be in the same place. Currently, online exam in UT has been implemented in a semi-proctoring manner, in which supervision is conducted online through Microsoft Teams application with active web camera and microphone, particularly during Covid-19 pandemic, for several courses in selected areas or regional offices. Through this method, UT ensures that students do not cheat during exams. Based on the research findings, UT is now planning to apply the online examination with full online proctoring system for all students.

Students

UT students come from various social and demographic backgrounds. Research topics related to students affairs include learning style (Marsinah et al., 2018, and Royandiah & Majidah, 2018), learning readiness (Purwantiningsih & Sardjijo, 2019 and Rohmah, 2019), and personal factors which could affect their study (Bintarti & Rahardjo 2019 and Alwi et al., 2018). Even though UT provides tutorials for almost all courses, one of the important findings of those studies relates to the need of students for more guidance from tutors or instructors (Setiani, 2020). Analysis on the learning process in online tutorials indicated that the interactions are mostly still one-way without meaningful feedback from tutors. This was felt to cause the feeling of loneliness among the students. Therefore, UT then requires all the tutors to respond and provide meaningful feedback to student within certain time (24 hours). Another finding is that students also imply to need more guidance in making choices of their course of study, which is also responded by UT positively. Counselling services have been intensified in both the ROs and electronically through the contact center.

Learning Materials

There are two types of learning materials developed by UT: printed (bahan ajar cetak or BAC) and digital (bahan ajar digital or BAD). In the past five years, a lot of research have focused on finding the best model of learning materials using a more advanced technology such as interactive digital learning materials (bahan ajar interaktif or BAI), which allow student to actively interact with the learning materials (Rahardjo and Hasanuddin, 2017;

Said, 2019; Suciati et al., 2017; Belawati, Padmo, & Prasetyo, 2019). BAI is designed to enhance the quality of students' personal learning experience by interacting with the content through self-instructional materials. Because of many advantages in BAI, especially in improving student learning, the development of interactive learning materials or BAI become one of UT's top priorities. Each study program is now obliged to develop BAI, particularly in a new textbook or revised edition of the textbook (Said and Ayuni, 2018). Other research on learning materials have also been focusing on the experimentation and development of prototypes of materials using virtual/ augmented realities. Lately, a research project dedicated to study the possibility of developing a metaverse leaning environment is also being conducted.

Learning Support System

One of the most essential infrastructures to facilitate students' independent learning is to provide a systematic and seamless learning support system. UT provides various learning supports including tutorials, contact centre, digital library, as well as radio and television programs that allows students to learn from different sources. One of the most popular learning supports was the face-to-face tutorials which are conducted di the regions. The global COVID-19 pandemic has forced UT to make adjustments in the implementation of the face-to-face activities and converted the face-to-face tutorials into synchronous web tutorials, which basically conducted face-to-face meetings via video conference platforms. Research related to the implementation of web tutorials was carried out in several aspects: development of web tutorial models (Rahayu, 2021), user experience and student satisfaction (Muflikah, 2021; Widuroyekti, 2021; and Yusrizal, 2021), and implementation (Rachmi, 2021). The results of those studies indicate that students like and felt comfortable with the web tutorials method. This has made UT consider continuing employing the web tutorials method even after the pandemic is over.

Management in Distance Education

Research related to institutional management and administration during the last five years has been mostly carried out with the focus on the development of various technological or software applications. The decision to focus on such application development was made because UT is determined to become a cyber university which required effective and efficient management. Some examples of applications developed in the last five years are related to academic administration and asset management: development and implementation of database security (Sufandi, 2016 and Wicaksono and Susanto, 2017), facilities and infrastructure management (MESRA, Manajemen Aset dan Prasarana) (Wicaksono, 2019), and system information on learning material transaction, including production, distribution, and inventory (SITTA or Sistem Informasi Tiras dan Transaksi Bahan Ajar) (Sufandi and Priono, 2019).

CONCLUSION

As an open and distance education institution, Universitas Terbuka (UT) always strives to improve its quality, including attempts to align its quality with international distance education implementation standards. To achieve these goals, UT aspires to have a strong digital education system in place by 2035, focusing on the digital learning ecosystem. Academic services, learning processes, learning support, as well as financial and asset administration, have all benefited from the digitization process. UT is now completing the transition to a State University with Legal Entities (also known as PTNBH). UT will have complete autonomy in both academic and non-academic aspects as a PTNBH. With this level of autonomy, UT has the potential to provide better services, such as developing/establishing new major study programs, hiring new lecturers and scientists, and, eventually, raising the number of students or the participation rate of higher-education students. Finally, in light of the rapid changes in ODL theories and practices, as well as the recent global pandemic of Covid-19, UT continues to make changes and innovations in order to meet the diverse needs of students, reach the unreachable, and improve the quality of graduates so that they can compete globally. Furthermore, via continuous research and innovation, UT aspires to become a globally known ODL institution, as well as an advocate for the global open education movement.

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Contributors: Mohamad Yunus, R. Benny Pribadi, Erika Pradana Putri, Heriani, Fawzi Rahmadiyan Zuhairi,& Hilma Erfiani Baroroh

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Universitas Terbuka

Jalan Cabe Raya, Pondok Cabe, Pamulang,
Tangerang Selatan- 15437, Banten- Indonesia
Phone: (+62 21) 740 1 585 | **ext.** 1356 or 1103
Fax: (+62 21) 749 0 147
Email: secretariat@aaou.org | aaou.org@gmail.com
Website: www.ut.ac.id/en