This Masterplan was developed with the support of a KOICA-administered grant from the Government of the Republic of Korea, under the Project for Enhancing the Distance Education Environment at Makerere University, in collaboration with KDS (Korea Institute for Development Strategy) and KNOU (Korea National Open University)

KOICA KDS 한국방송통신대학교 KOREA NATIONAL OPEN UNIVERSITY

Masterplan for Makerere University Open, Distance & eLearning

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Approved by
The University Council on
18th September, 2025

MAKERERE UNIVERSITY

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Foreword

I am delighted to introduce the Masterplan for Open, Distance and eLearning (ODeL) at Makerere University for the period 2025/26 – 2035/36. This Masterplan marks a significant milestone in our journey to harness the potential of technology-enhanced learning, increase access to quality education, and promote lifelong learning.

The Masterplan is a testament to our commitment to innovation, flexibility, and inclusivity in education. It outlines our vision for ODeL, which is to provide high-quality, flexible, and accessible learning opportunities to a diverse range of students, both locally and globally. This is in line with the University Strategic Plan 2019/20 – 2029/30 and the University ODeL Policy 2015.

This Masterplan has been developed with support from the people of the Republic of Korea through a grant administered by Korea International Cooperation Agency (KOICA). The grant has enabled staff at Korea Institute for Development Strategy (KDS) and experts from Korea National Open University (KNOU) to collaboratively work with staff of Makerere University working on the Project for Enhancing the Distance Education Environment at Makerere University to write this plan. I would like to acknowledge the dedication and hard work of the team that developed this Masterplan. Their efforts have ensured that we have a robust and comprehensive plan that will guide our ODeL endeavors for the ten years.

I urge all stakeholders, including staff, students, and partners, to embrace this Masterplan and work together to implement its recommendations. I am confident that this plan will enable Makerere University to maintain its position as a leader in ODeL in Africa and contribute to the transformation of lives through education.

Dr. Lorna Magara

Chairperson of Makerere University Council

Acknowledgement

The preparation of the ***Makerere University Masterplan for Open, Distance and eLearning (ODeL)*** was made possible through the generous support of the Government of the Republic of Korea and the Korea International Cooperation Agency (KOICA), whose grant funded the Project for Enhancing the Distance Education Environment at Makerere University. We acknowledge the technical collaboration and guidance of experts from the Korea National Open University (KNOU) and partner Korean institutions, whose technological expertise enriched the Masterplan's design. We recognize the contribution of the Project Steering Committee, the Project Implementation Unit, the Project Management Consultants, and the Korea Institute for Development Strategy (KDS), whose advisory support and expertise strengthened the planning and documentation process.

The University acknowledges the support and policy stewardship of the University Council, whose governance role has been central to the advancement of ODeL at the University. We are grateful to the leadership and management at all levels, whose direction ensured alignment with Makerere University's Strategic Plan 2019/20–2029/30.

Special appreciation is extended to the Project Principal Investigators – Prof. Henry Alinaitwe and Dr Venny Nakazibwe, the Director of the Institute of Open, Distance and eLearning (IODeL) – Prof. Paul Muyinda, the Director of the Information Communication Technology Support – Mr. Paul Mugabi and the entire Project team, whose technical leadership, stakeholder coordination, data collection, and academic contributions were instrumental to the development of this Masterplan.

This Masterplan advances national priorities for digital transformation in education and aligns with Uganda's long-term development vision and the Ministry of Education and Sports digital strategies, including Uganda Vision 2040, which emphasise ICT-enabled learning, widened educational access, and strengthened digital competency.

Finally, the University extends gratitude to all academic staff, administrative units, ICT personnel, students, and external partners who provided data, contributed to reviews, or offered technical insights. Their collective effort ensured that this Masterplan is comprehensive, evidence-based, and responsive to the evolving needs of Makerere University and Uganda's higher education sector.

Prof. Barnabas Nawangwe

Vice Chancellor, Makerere University

EXECUTIVE SUMMARY

The Makerere University Open, Distance and eLearning (ODeL) Masterplan provides a comprehensive and forward-looking roadmap for transforming teaching, learning, research, and service delivery through digital technologies. Rooted in Makerere University's long-standing commitment to academic innovation, the plan responds to the national and global momentum toward digitalisation and flexible learning pathways. It outlines a unified institutional vision, policy direction, infrastructure development strategy, and implementation framework designed to guide ODeL growth over the next decade.

The motivation for the Masterplan is driven by rising student enrolment, evolving learner needs, constraints in physical infrastructure, and the growing importance of lifelong learning. The COVID-19 pandemic demonstrated the critical role of digital systems in maintaining academic continuity during disruptions, exposing both strengths and gaps in the University's digital readiness. In this context, the Masterplan positions ODeL as a central pillar of Makerere University's academic mission rather than a supplementary activity. It seeks to modernise instructional delivery, enhance learner support, and ensure that the University remains competitive, resilient, and inclusive in the digital era.

1. Vision and Strategic Direction

The vision of the Masterplan is to cultivate a student-centred, digitally empowered university capable of delivering high-quality education through flexible and innovative learning models. Makerere University aspires to become a leading institution in open, distance and eLearning in Africa by embedding digital technologies into all aspects of academic delivery, strengthening human capacity, and ensuring that teaching aligns with 21st-century pedagogical needs.

Central to this vision is the recognition that ODeL encompasses more than online learning. It includes blended learning, technology-supported distance education, digital content ecosystems, multimedia production, and flexible pathways that allow learners to access education regardless of geographical or socioeconomic constraints. The plan, therefore, sets out a holistic development agenda that integrates institutional systems, governance, infrastructure, pedagogy, and capacity building into a unified framework.

2. Rationale and Context

The Masterplan aligns with Uganda's national digitalisation priorities, including the Digital Vision 2040 and the National ICT Policy, which promote equitable access to digital learning opportunities. As student numbers continue to grow, Makerere's physical infrastructure is strained, making technology-supported learning essential for sustaining quality and expanding access. Global trends, including the increasing use of artificial intelligence, data-driven decision-making, and digital learning analytics, require higher education institutions to re-examine their pedagogical and administrative processes.

The COVID-19 experience underscored the necessity of robust learning platforms, digital skills training, and clear policies on online teaching and assessment. It revealed challenges such as limited infrastructure, gaps in digital literacy, and uneven capacity across colleges. The Masterplan addresses these gaps while positioning the University for future resilience.

3. Strategic Pillars of the Masterplan

The first pillar focuses on academic transformation and digital pedagogy. It emphasises active, student-centred learning supported by well-designed online and blended models. This includes developing high-quality digital course materials, improving the design of learning activities, and integrating emerging technologies such as multimedia simulations, artificial intelligence, and learning analytics.

The second pillar prioritises building robust digital infrastructure and integrating institutional systems. It calls for upgrading the Learning Management System, improving server performance, expanding campus connectivity, strengthening ICT security, and integrating digital academic services such as MUELE, ACMIS, and e-assessment systems. Multimedia studios and content development labs form part of this infrastructural agenda.

The third pillar targets human resource development and change management. Transforming teaching and learning requires a digitally skilled workforce, including lecturers, instructional designers, eLearning champions, multimedia specialists, and ICT personnel. The plan outlines a structured capacity-building framework aimed at improving digital literacy, strengthening pedagogy, and supporting cultural change across the University.

The fourth pillar emphasises governance, policy, and quality assurance. It calls for clear institutional policies governing online teaching, assessment, intellectual property, data privacy, disability inclusion, and learner support. It also outlines governance structures at University, College, and School levels, ensuring that roles, responsibilities, and reporting mechanisms are clearly defined. Quality assurance procedures are integrated into course design, delivery, and evaluation.

The fifth pillar focuses on enhancing the student experience. It highlights the need for responsive online support services, academic advising structures, peer support systems, disability-inclusive design, and digital orientation programmes. The Masterplan recognises that student success depends not only on content and platforms but also on accessible support systems and an inclusive learning environment.

The sixth pillar addresses research, innovation, and partnerships. The plan encourages research on digital learning, supports the adoption of new technologies, and promotes collaborations with global institutions, industry partners, and development agencies such as KOICA and the Mastercard Foundation. These partnerships are essential for funding, knowledge sharing, and continuous innovation.

4. Implementation Framework

The Masterplan adopts a phased approach that outlines short-term, medium-term, and long-term priorities. In the short term, emphasis is placed on upgrading digital infrastructure, establishing the Makerere University eLearning Centre, revitalising learning centres across Uganda, developing digital courseware using standardised templates, and implementing staff and student training programmes. The medium-term focus includes scaling blended learning across all Colleges, integrating systems, and strengthening quality assurance mechanisms. Over the long term, the plan envisions full institutionalisation of ODeL, continuous innovation, and sustainable financing models. Implementation is a shared responsibility of IODeL, DICTS, academic Colleges, and the Office of the Deputy Vice Chancellor (Academic Affairs).

5. Resource Requirements and Funding Strategy

Successful implementation of the Masterplan requires substantial investment in infrastructure, staffing, training, content development, and operations. The plan outlines a multi-source funding strategy that includes government allocations, internal University budgets, development partner support, and strategic industry partnerships. Sustainable financing is framed as essential to maintaining the quality and continuity of digital learning initiatives.

6. Expected Impact

The ODeL Masterplan positions Makerere University to become a continental leader in digital learning. It is expected to improve access to higher education, enhance teaching quality, strengthen assessment integrity, and promote institutional resilience to disruptions. Students will experience more flexible, engaging, and inclusive learning environments. Staff will benefit from improved digital competencies and more efficient teaching tools. The University will gain global competitiveness, expand research output in digital education, and strengthen service delivery to diverse learners.

Conclusion

The Makerere University ODeL Masterplan represents a transformative blueprint for building a digitally empowered academic institution. Through coherent governance, strategic investment, and sustained institutional commitment, the plan will reshape teaching and learning at Makerere University, equipping students and staff for the demands of a rapidly changing world. Its implementation will enable Makerere to deliver high-quality, flexible, and inclusive education that meets national development needs and aligns with global trends in higher education.

List of abbreviations and acronyms

ACMIS	Academic Management Information System
AI	Artificial Intelligence
AIT	Accra Institute of Technology
CCTV	Closed Circuit Television
CEDAT	College of Engineering Design Art and Technology
CIPP	Context-Input-Process-Product
CoCIS	College of Computing and Information Science
CPU	Central Processing Units
DAS	Digital Agenda Strategy
DATC	Digital Agenda Technology Committee
DBA	Database Administrator
DDD	Detailed Design Document
DICTS	Directorate of Information Communication Technology Support
DMC	Digital Media Centre
EDUROAM	Educational Roaming
eTL	e-Teaching Learning
HR	Human Resources
HOU	Hanoi Open University
ICT	Information Communication Technology
IPO	Input-Process-Output
IODeL	Institute of Open, Distance and eLearning
IoT	Internet of Things
ISP	Information Strategy Plan
IVCR	Internet Video Conference Rooms
KDS	Korea Institute for Development Strategy
KERIS	Korea Education Research Information Service
KNOU	Korea National Open University
KOICA	Korea International Cooperation Agency
KOLIBRI	A free Learning Management System in Uganda
KORUS	Korea Research at Universities System
LMSs	Learning Management Systems
Mak	Makerere University
MIT	Massachusetts Institute of Technology
MMS	Multimedia Messaging Service

MoES	Ministry of Education and Sports
MoFPED	Ministry of Planning and Finance
MoICTNG	Ministry of ICT and National Guidance
MOOC	Massive Open Online Course
MUELE	Makerere University eLearning Environment
NCHE	National Council for Higher Education
ODeL	Open, Distance and eLearning
OER	Open Educational Resources
OLTP	Online Transaction Processing
OPS	Open Programmability System
PIU	Project Implementation Unit
PMU	Project Management Unit
PSC	Project Steering Committee
Q&A	Question and Answer
RISS	Research Information Sharing Service System
R&D	Research and Development
SAMS	Student Records Management and Academic Administration System
SMS	Short Messaging Service
SNS	Social Networking Service
SORS	Student Online Registration System
SQL	Structured Query Language
SSO	Single Sign-On
TFT	Task Force Team
UGX	Uganda Shillings
UNESCO	United Nations Education Scientific and Cultural Organisation
UNIX	UNIX Operating System
VR	Virtual Reality

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01

Introduction

01 Introduction

1.1 Background

Makerere University (hereinafter referred to as Mak) has an Open, Distance and eLearning (ODeL) Policy (2015). However, distance education was first launched at Mak in 1991 through what was called the External Programme. The two-pioneer academic programmes in the External Programme were the Bachelor of Commerce (External) and Bachelor of Education (External). In 2003, a Bachelor of Science External programme was added. In 2004, the Commonwealth Youth in Development (CYP) Diploma programme came onboard. In 2007, the Master of Public Health Distance was born. All these distance learning programmes employed first generation distance education. In 2001, Mak introduced Blackboard LMS which was later in 2008 replaced by Moodle, an open source LMS. The Moodle powered LMS was baptized as Makerere University eLearning Environment (MUELE). Between 2006 and 2010, the use of mobile devices (mLearning) to support distance learners also emerged. Blended support to distance learners using print-based study materials, occasional face to face tutorials, Blackboard, MUELE, and mobile learning became very prominent in the period 2006 and 2013. Due to the need to entrench online support in the traditional first-generation distance education, Makerere University launched a project for leapfrogging first generation distance education into fifth generation distance education or distance education which is powered by online resources. The project resulted in the promotion of the policy on Open, Distance and eLearning in 2015 and birth of two largely online distance education programmes – the Master of Instructional Design and Technology and the Bachelor of Youth Development Work were born and launched in 2018. These programmes are largely taught on the institutional LMS – MUELE.

Mak has an ICT infrastructure which among other uses is used to offer online teaching and learning, communication, and physical teaching. Mak has been using the Moodle based MUELE system for online teaching for not only distance but also internal learners for more than 15 years.

With the coming of the COVID-19 pandemic in 20, universities around World, heightened the use of ODeL in teaching, learning and research. Since then, universities have been enhancing the quality and expanding the use of ODeL approaches in conventional pedagogy. Makerere University has taken the following steps:

- ☑ Recognizing ODeL as an appropriate pedagogy for uninterrupted education during and after pandemics.
- ☑ Expanding opportunities for higher education by increasing the number of students admitted through ODeL, and it hopes to enroll more people to Mak.

- ☑ Creating an environment where anyone in Uganda can receive education by expanding ODeL, not only through higher education but also through lifelong education.
- ☑ Providing ODeL through the MUELE system, but it is still in the initial stages and lacks facilities and personnel.
- ☑ Providing an ICT Masterplan to serve as the foundation for a mid-to-long-term development strategy aimed at attracting students from across Uganda and expanding its reach throughout Africa and beyond.

Out of 388 academic programmes at Mak, only eight (8) programmes are accredited to be taught on a distance mode. The Mak strategic plan 2020-2030 has a vision to increase the number of programmes accredited as and taught through the distance mode. This vision cannot be realized without a comprehensive Masterplan for ODeL. This document sets out to provide a 10-year Masterplan for ODeL at Mak. With the Masterplan, Mak will:

a) Expand the provision, efficiency, and effectiveness of her ODeL provisions.

b) Avail education to Ugandans and people in other countries who would like to have education at Mak without being physically present.

c) Increase the reach but also reduce the cost of education.

d) Provide education to more people at their convenient times.

e) Provide lifelong learning to all those wishing to continue learning.

1.2 Objectives and Scope

Objectives

This Masterplan is guided by four main objectives:

- ☑ To analyze the current status and requirements of ODeL in Uganda
- ☑ To create an ODeL environment consistent with Uganda's higher education policy
- ☑ To suggest an ODeL environment suitable for Mak
- ☑ To prepare a Masterplan for the future expansion and development of ODeL at Mak.

Scope

The Masterplan has been designed to address the following key areas:

- ☑ Propose a plan for the development of ODeL at Mak based on the results of a survey on the current status of ODeL in higher education in Uganda.
- ☑ Present implications related to the operation and development direction of ODeL by identifying the current status of policies and operations related to ODeL in Uganda.

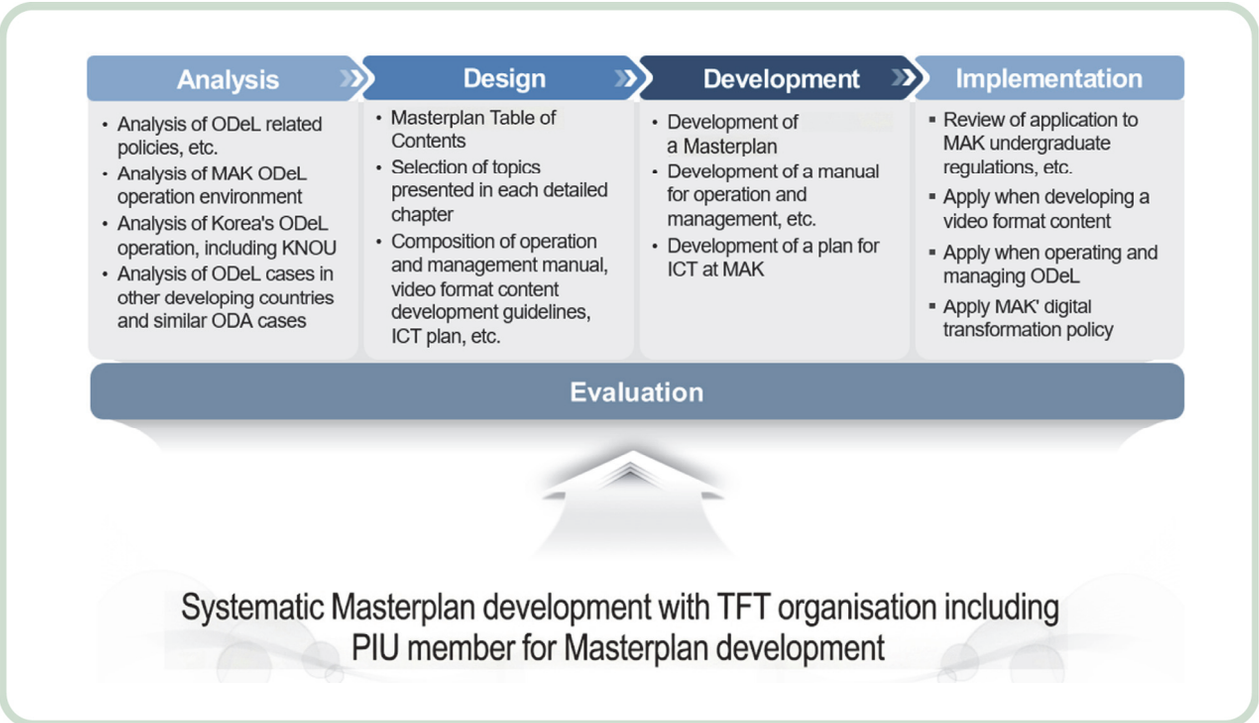
- ☑ Present implications through an analysis of cases of ODeL operation in other contexts such as in Korea, Africa, the west and other developing countries.
- ☑ Propose a plan to revise internal regulations and rules for efficient ODeL at Mak.
- ☑ Propose an ODeL operational organisation for the operation of the newly established "Mak ODeL Centre" and present a plan to strengthen human resources capacity and an ODeL operation and management manual.
- ☑ Present a mid- to long-term development roadmap plan including an ICT plan for the expansion and development of ODeL at Mak.

1.2.1 Procedure and method

This Masterplan has been developed in a consultative manner. The Institute of Open, Distance and eLearning (IODeL) at Makerere University and the Directorate of ICTs (DICTS) have been instrumental in its development. National and International policy have been consulted. The laws to do with distance/online teaching and learning have been reviewed. These have been taken care of appropriately in the Masterplan.

There has been benchmarking with universities in the Republic of Korea, especially the Korea National Open University and the Seoul National University. The procedure for developing a Masterplan is promoted by considering the stages of analysis, design, development, implementation, and evaluation. There has been a review of the Masterplan contents with Ugandan experts, implying that this plan is a co-created document.

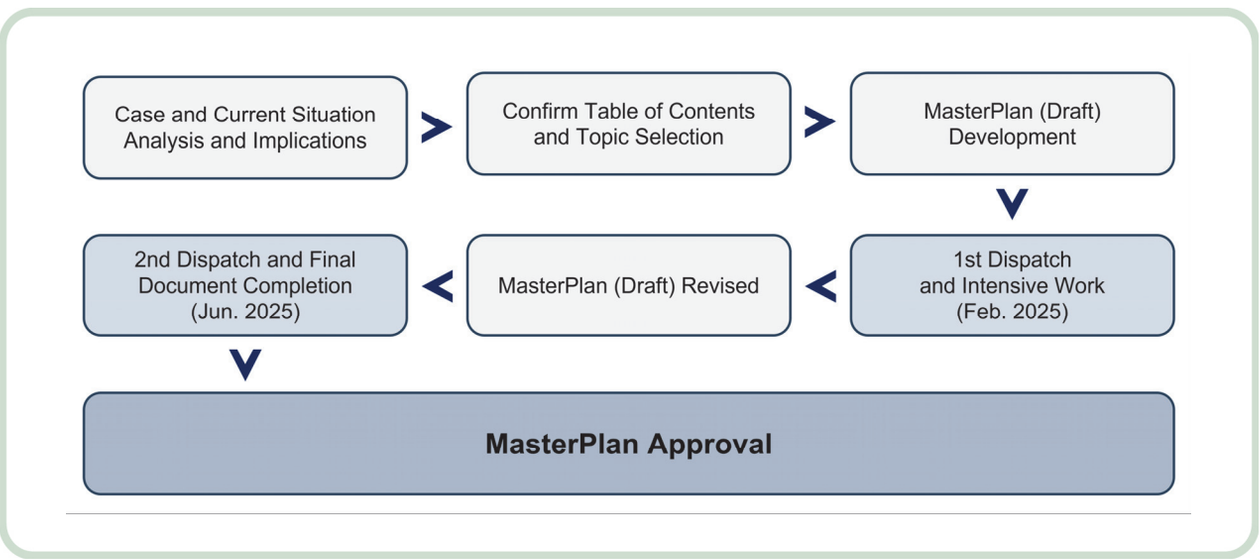
The draft Masterplan was presented to the Colleges and Administrative Units for their input and buy-in. After that, the Masterplan was considered by the University Senate and was approved by the University Council. Figure 1.1 shows the systematic procedure used to develop this Masterplan document.



※ **Figure 1.1** Systematic Masterplan development process

The table of contents and topic selection were confirmed through the Masterplan development Task Force Team (TFT), and a draft Masterplan was developed. The contents related to the local situation, such as the current status of Mak, were written mainly by Mak ODeL experts and jointly reviewed

1.2.2 Detailed Procedure



※ **Figure 1.2** Process of Masterplan Formulation

1.2.3 Implementation system

A TFT team for developing the Masterplan was organized, consisting of Ugandan and Korean experts, including members of the Project Implementation Unit (PIU)

In each stage of the development of the Masterplan, if necessary, the quality of the Masterplan was improved by receiving review and advice from the Project Steering Committee (PSC) The key participants in the process are included in Figure 1.3.

❊ Figure 1.3 Key participants in the process

1.3 Precondition and Limitation

The planning of this Masterplan was prepared based on the successful completion of the "Project for enhancing the distance education Environment at Makerere University in Uganda" and, therefore, assumes the successful business results of this project. The following ODeL-related plans of Mak must be successfully implemented:

- ☑ IODeL six (6) year work plan (2024/25-2029/30);
- ☑ IODeL revised implementation strategy/framework for the policy on Open, Distance and eLearning.
- ☑ The Government of Uganda and Mak must continue to secure the budget necessary to implement the Masterplan
- ☑ The Ugandan government needs to continue investing in and supporting internet accessibility, including expanding IT infrastructure and reducing internet rates
- ☑ The Masterplan was developed based on Korea's ODeL experience and taking-into-account the Ugandan ODeL environment.

02

Analysis of Current Status and Related Cases

02

Analysis of Current Status and Related Cases

2.1 Cases of ODA related to ODeL in developing countries

Official Development Assistance (ODA) has played a pivotal role in the advancement of Open, Distance and eLearning (ODeL) across developing countries. Through collaborative funding, technical support, and capacity-building initiatives, ODA interventions have helped to bridge educational gaps, expand access to higher education, and strengthen institutional infrastructure. This section examines selected cases where ODA has been instrumental in supporting ODeL initiatives, highlighting their objectives, implementation strategies, and impact on educational outcomes.

At Makerere University, efforts to build capacity in Open, Distance and eLearning (ODeL) are already underway. The Mastercard Foundation is providing some support towards developing eLearning content. To ensure effective coordination of internal initiatives and external support from development partners, the development of a Masterplan is essential. The following case studies have been identified as valuable benchmarks for this Masterplan:

2.1.1 Africa Virtual University Project

Overview

The Africa Virtual University (AVU) was established in 1997 with the support of the World Bank as a pioneering initiative to enhance access to quality higher education across Africa. Operating as a pan-African intergovernmental organisation, the AVU leverages information and communication technologies (ICT) to overcome traditional barriers to education, with the aim of fostering a skilled and competitive professional workforce on the continent. AVU's headquarters are located in Nairobi, Kenya, with a regional office in Dakar, Senegal, and 19 participating member countries committed to educational advancement through digital innovation.

Key Activities and Contributions

Since its inception, the AVU has made significant strides in expanding higher education opportunities across Africa. To date, it has provided education and training to over 75,000 students, thereby increasing accessibility and reducing the gap in tertiary education provision. A major strength of the AVU lies in its extensive learning network, which includes partnerships with more than 53 distance learning institutions across over 30 countries in Sub-Saharan Africa.

This broad collaboration has created a robust and interconnected educational ecosystem. Additionally, the AVU promotes inclusivity through its multilingual programs, which are offered in English, French, and Portuguese, catering to diverse linguistic communities across the continent.

Partnerships and Collaboration

Strategic partnerships have played a crucial role in the success of the AVU. Early support from Intelsat, which provided free satellite bandwidth for educational broadcasting, was instrumental in establishing AVU foundational infrastructure. The AVU has also collaborated with leading global universities, such as the Massachusetts Institute of Technology (MIT), to develop customized, high-quality courses tailored to the African context. These collaborations have enriched the AVU academic programs offered and reinforced its commitment to delivering relevant and globally competitive education.

2.1.2 Kenyatta University's School of Virtual and Open Learning (DSVOL)

Overview

Established on June 30th, 2014, the Digital School of Virtual and Open Learning (DSVOL) at Kenyatta University represents a strategic response to the increasing demand for higher education in Kenya and across the African continent. Through the adoption of Open, Distance and eLearning (ODeL) methodologies, DSVOL is committed to expanding access to quality education for learners who may be unable to participate in traditional campus-based programs.

Purpose and Academic Programs

The core mission of DSVOL is to enhance accessibility and flexibility in higher education by leveraging digital platforms. The school comprises nine academic divisions, offering a wide range of programs, including certificate courses, undergraduate degrees, and graduate programs. This structure allows the institution to cater to diverse educational needs while maintaining academic rigor and integrity.

Key Features

A distinctive feature of the Digital School is its commitment to technological empowerment. All students are provided with free tablets pre-loaded with essential educational resources, ensuring that learning materials are readily accessible from the outset. The institution also emphasizes mobile learning, offering a virtual learning environment that is accessible through mobile technology, thereby accommodating learners in both urban and remote areas.

DSVOL employs a blended learning model that combines digital online lectures with real-time, personalized academic guidance. This hybrid approach allows for flexibility while maintaining a human touch in the learning experience. Furthermore, the school offers an accelerated degree

completion option, enabling full-time students to complete a typical four-year degree program in just three years. This model not only saves time but also reduces the overall cost of education, contributing to the school's goal of affordability and inclusiveness.

Regional Presence

To support its national reach, Kenyatta University has established regional learning Centres in various cities across Kenya, including Nairobi, Mombasa, Garissa, Embu, Nyeri, Nakuru, Kericho, and Kisumu, among others. These Centres serve as hubs for academic support services, examinations, and in-person consultations, bridging the gap between virtual learning and on-the-ground assistance.

2.1.3 Accra Institute of Technology (AIT)

The Accra Institute of Technology (AIT) is a leading technology-focused private university in Ghana, renowned for its commitment to advanced research and development. Modelled after the Massachusetts Institute of Technology (MIT), AIT integrates innovation, science, and technology into its core mission to deliver high-quality tertiary education tailored to modern industry demands. Through its dynamic structure and diverse delivery platforms, AIT has positioned itself as a pioneer in virtual and blended learning in West Africa.

Academic Programs and Delivery Platforms

AIT offers a wide range of undergraduate and postgraduate degree programs, including Bachelor of Science (BSc), Bachelor of Engineering (B.Eng), Master of Science (MSc), and Doctor of Philosophy (PhD) degrees in fields such as Engineering, Computer Science, Information Technology, and Business. The university operates two major online platforms namely, AIT Virtual University and; AIT e-University, which facilitate distance education across and beyond Ghana's borders.

The institution employs a flexible and inclusive approach to educational delivery, combining internet-based platforms, intranet access via on-campus learning centres, and online communication tools such as email, discussion forums, and chat systems. Additionally, face-to-face interactions through seminars ensure that students benefit from both virtual and personal academic engagement.

Technical Infrastructure

AIT's robust technical ecosystem supports its virtual learning model. The Learning Management and Support System (LeMASS), a customized platform built on Moodle, underpins academic content delivery. This is complemented by the Student Online Registration System (SORS) and the Student Academic Management System (SAMS), which handle administrative functions, academic records, and student services efficiently.

Quality Assurance and Content Standards

Quality education is central to AIT's operations. The institution adheres to international standards for content design and delivery. This includes the modularization of courses, the articulation of clear learning objectives, and the integration of multimedia tools and real-life examples. These measures ensure that students receive instruction that is not only academically sound but also engaging and relevant.

Student Support and Learning Resources

AIT provides extensive academic support to its students through a variety of learning materials. These include printed manuals, CDs/DVDs, textbooks, e-books, lecture notes, quizzes, and assessment materials. Moreover, students have access to an expansive digital resource base through a Greenstone-powered electronic library system. This includes content from over 1,800 MIT courses, greatly enriching the learning experience with globally recognized academic materials.

2.1.4 Kwame Nkrumah University of Science & Technology – Institute of Distance Learning (KNUST- IDL)

Established in 2005 in Ghana, the Institute of Distance Learning (IDL) at Kwame Nkrumah University of Science and Technology (KNUST) is a leading institution dedicated to expanding access to quality higher education across Ghana and the broader West African region. Using Open, Distance and eLearning (ODeL) approaches, KNUST-IDL serves a growing population of working professionals and non-traditional learners who require flexible, accessible learning solutions.

KNUST-IDL offers a wide array of academic programs, including undergraduate degrees, graduate diplomas, and professional certification courses. Central to its delivery model is the V-Classroom, a web-based virtual learning environment that supports asynchronous and synchronous learning, making education accessible anytime, anywhere. The system is designed to work seamlessly across all digital devices, including smartphones and tablets, ensuring broad accessibility.

The institute provides a comprehensive learner support system that includes downloadable materials in various formats such as, PDFs, e-books, CDs, DVDs—and robust communication tools like email, chat rooms, and message boards. These features foster peer collaboration and allow students to engage directly with instructors in real-time. An integrated online library offers access to a wide range of academic resources to further support independent study.

2.1.5 UNESCO UNITWIN KNOU

Overview

Launched in 2017, the UNESCO-UNITWIN Distance Education Capacity-Building Project is an international initiative led by Korea National Open University (KNOU) in collaboration with the Ministry of Education of Korea. This project is part of the broader UNITWIN/UNESCO Chairs Programme, which aims to foster international academic solidarity and institutional capacity-building. The specific focus of this project is to enhance the digital capabilities and educational quality of universities in Asia through collaborative development, research, and training.

The project works closely with partner universities in various countries to strengthen their capacity in distance and online education. In Vietnam, Hanoi Open University and Ho Chi Minh Open University have collaborated with KNOU to develop online evaluation systems and improve institutional eLearning frameworks. In Nepal, partnerships with Tribhuvan University and Nepal Open University focus on boosting technical and pedagogical capacity in distance education. Similarly, the Mongolian University of Science and Technology is engaged in joint research with KNOU, specifically on big data visualization and quality management in eLearning content. The project also includes collaboration with Open University Malaysia, where both institutions have co-developed Korean language learning content for digital delivery.

In addition to these country-level partnerships, the project organizes annual international conferences that serve as platforms for academic exchange, best-practice sharing, and policy dialogue. Another key initiative is the Digital Literacy Invitation Training, which invites faculty and educational stakeholders from partner countries to Korea for hands-on training in digital education tools and strategies.

2.1.6 UZBEKSTAN UWED Cyber University Establishment Project (UWED)

Overview

The Establishment of Online Education System and Environment for UWED Cyber University is a strategic educational development initiative jointly led by the Korea International Cooperation Agency (KOICA) and the University of World Economy and Diplomacy (UWED) in Uzbekistan. Scheduled to run from 2025 to 2029, this five-year project aims to significantly enhance the quality, accessibility, and sustainability of higher education in Uzbekistan by building a comprehensive online education infrastructure.

With a total budget of $6.9 million, the project focuses on the full-scale establishment of an online learning ecosystem for UWED Cyber University. The core components include the development of an Online Education Masterplan and Academic Administration System ($1.5 million), and the construction of digital infrastructure required to support virtual learning environments ($3.46 million). These efforts are designed to lay the technical and institutional foundations for high-quality online education delivery.

The project also allocates $600,000 to support the establishment of new academic departments tailored for online delivery in key fields such as International Relations, International Economics and Management, and International Law disciplines that reflect UWED's core academic strengths. An additional $580,000 is dedicated to capacity-building initiatives to train faculty and staff in digital pedagogy and educational technologies, ensuring sustainable and effective implementation. Finally, $760,000 is set aside for overall project management and contingency planning.

Following the completion of a feasibility study in 2023, the project is now preparing for its next phase, which involves conducting a second, more detailed study by the end of 2024. This upcoming phase will focus on finalizing the project's implementation roadmap and operational framework.

Through this ambitious and well-resourced initiative, KOICA and UWED aim to position Uzbekistan as a regional leader in online higher education, fostering innovation, inclusion, and international academic engagement in the digital era.

2.1.7 Bangladesh Open University eLearning Capacity Building Project (BOU)

Overview

The Bangladesh Open University (BOU) eLearning Capacity Building Project was a strategic initiative implemented by the Korea International Cooperation Agency (KOICA) between 2011 and 2012, with the goal of modernizing BOU's digital education infrastructure and enhancing its institutional capacity for delivering quality distance education. With a budget of USD 2.7 million, the project focused on both technological and human resource development to improve educational accessibility and delivery across Bangladesh.

The project was carried out across multiple key locations, including Gazipur, Dhaka, and Mymensingh, with BOU's headquarters in Gazipur serving as the central implementation hub. One of the core achievements was the installation of a Learning Management System (LMS) and the deployment of eLearning equipment at the headquarters, laying the foundation for a structured, scalable digital learning environment.

A major component of the project involved the establishment of six Internet Video Conference Rooms (IVCRs) in regional centres. These IVCRs enabled real-time, interactive virtual classrooms, bridging the gap between instructors and students across different locations. Sessions were also recorded and broadcast on television and online platforms, further expanding the reach of BOU's educational content to learners across the country.

To ensure sustainability and effective use of the new systems, KOICA also dispatched eLearning experts to provide specialized training to BOU staff. These capacity-building efforts significantly enhanced the university's ability to manage and deliver online education, improve course quality, and support broader institutional modernization.

2.1.8 HANOI Open University in Vietnam (HOU)

Overview

Hanoi Open University (HOU) is a key institution in Vietnam's efforts to expand access to higher education, particularly for adult learners and working professionals. In alignment with its mission to provide inclusive and flexible education, HOU partnered with the Korea International Cooperation Agency (KOICA) to implement the Project for Improvement of the Hanoi Open University from 2014 to 2019. This five-year initiative, supported by a USD 3 million investment, was a transformative step in strengthening Vietnam's capacity for high-quality distance education.

A central component of the project involved the development of eLearning infrastructure across the country. This included the establishment of eight regional eLearning centres, equipped with digital systems, servers, and content production studios at HOU's main campus in Hanoi. These facilities were critical in expanding the reach of HOU's academic programs and improving the quality of its digital course offerings.

The project also benefitted from the dispatch of expert teams in various areas such as management, content development, system operation, and technical maintenance. These specialists worked closely with local staff to build institutional capacity and ensure the sustainability of the new systems. Furthermore, education and training programs were provided to enhance the skills of HOU faculty and administrators in managing and delivering eLearning effectively.

Several factors contributed to the success of the project. First, the initiative aligned closely with HOU's founding mission of promoting "open" education, which emphasizes flexibility, accessibility, and lifelong learning. Second, the project gained strong institutional and legal support, including consensus on necessary amendments to national regulations concerning distance education. Finally, the growing demand for adult and continuing education in Vietnam created a favorable environment for the rapid adoption of eLearning.

2.1.9 ASEAN CYBER UNIVERSITY Project

Overview

The ASEAN Cyber University (ACU) Project is a regional initiative aimed at strengthening the digital education ecosystem and promoting collaborative higher education across Southeast Asia. Led by the Korea Education and Research Information Service (KERIS) under the auspices of the Ministry of Education of Korea, the project was initially launched in 2012, with full-scale implementation beginning in 2016. Its core objective is to build robust online education infrastructure and expand digital learning capabilities among ASEAN member states, while fostering regional academic cooperation.

The project was implemented in three phases, each designed to progressively scale up impact and engagement. During Phase 1 (2012 – 2015), ACU focused on establishing foundational

eLearning infrastructure in four pilot countries—Cambodia, Laos, Myanmar, and Vietnam, and enhancing educational access through Korea's credit exchange system and the deployment of the ACU Learning Management System (ACU-LMS).

Phase 2 (2016-2019) marked the expansion of ACU's reach to nine ASEAN countries, broadening the scope of collaboration. This phase introduced the ACU Open Educational Resources (ACU-OER) platform, enabling the sharing of digital higher education content across institutions. It also featured one-on-one consulting partnerships between Korean cyber universities and their ASEAN counterparts, facilitating localized, practical support in developing and implementing effective eLearning strategies.

Since 2020, Phase 3 has represented a transition of ACU into a non-ODA (Official Development Assistance) model, reflecting a shift toward self-sustainability and deeper integration into ASEAN regional frameworks. The ACU-OER platform was enhanced with multilingual capabilities, further improving accessibility for diverse learners across all 10 ASEAN countries.

The ACU Project's achievements are significant, having improved both digital literacy and access to online education throughout Southeast Asia. It has become a cornerstone initiative in building regional digital resilience, democratizing higher education, and fostering sustainable academic collaboration among ASEAN nations.

2.2 Cases of ODeL operations in Korea

Open, Distance and eLearning (ODeL) in South Korea has developed significantly over the past two decades, aligning with the country's emphasis on digital innovation and lifelong learning. Initially driven by the need to expand educational access for adult learners and working professionals, ODeL has become an integral part of the national education strategy. Institutions such as Korea National Open University (KNOU), cyber universities, and various public-private eLearning platforms illustrate the diverse ways ODeL is implemented across the country. These cases demonstrate how Korea leverages technology to provide flexible, accessible, and high-quality education to a wide demographic, particularly in response to societal shifts and the growing demand for upskilling and reskilling in a fast-changing economy.

2.2.1 Types of higher education institutions in Korea

a) University and College

The main purpose of universities and colleges is to develop students' personalities, teach and research the profound theories of science and arts, and develop methods of application thereof, necessary for the development of the State and human society. There are different types of colleges in the education system of Korea, enacted by different sections of the Higher Education Act. A brief summary about the educational function(s) of each college is given below:

b) Industrial College

Purpose: Industrial Colleges were established to train industrial human resources who will contribute to the development of the State and society by providing an opportunity for higher education to those who intend to undergo continuing education for the research and study of science and the arts or expert knowledge, or skills required for industrial society.

c) Teachers' College (University of Education)

Purpose: Teachers' Colleges are mandated to train elementary school teachers. In accordance with the Higher Education Act, the education at the teachers' colleges, colleges of education, comprehensive teachers' training colleges and departments of education shall be provided to ensure that students achieve the following objectives: (i) To establish firm values and sound teachers' ethics as educators; (ii) To enable learners to grasp deeper knowledge and the detailed methods of teaching and practicing them, and; (iii)To establish a foundation for students developing the quality and abilities as educators for themselves throughout their lives.

d) Junior College

Purpose: to train professionals necessary for developing the State and society by teaching and researching expert knowledge and theories with respect to various fields of society and cultivating talents (Term of School Years: 2-3 years)

e) Cyber College

Higher Education Act Article 2-5: Air colleges, correspondence colleges, air and correspondence colleges, and cyber colleges (hereinafter referred to as "cyber colleges")

Purpose: to train human resources the State and society need by providing citizens with an opportunity to undergo higher education through distance education via information and communications media and to contribute to the development of lifelong education by realizing an open learning society

f) Technical College

Purpose: to train experts equipped with both theories and practical abilities by having industrial workers undergo continuing education for the research and study of expert knowledge and skills in the industrial field.

g) School

Refer to educational institutions similar to University and College, Industrial College, Teachers' College, Junior College, Cyber College, and Technical College. They are established with legal basis derived in: Article 59 of the「Higher Education Act」

h) School-Type Lifelong Educational Establishment (Major College)

Defined as a high technical school which is converted into a lifelong educational establishment, the graduates of which are recognized as having educational attainment and degree equal to those of graduates of a junior college, after obtaining authorization from the Minister of Education. Such Schools are legally established within: Article 31 of the「Lifelong Education Act」

i) In-House College-type Lifelong Educational Establishment

Definition: A lifelong educational establishment, where an operator of the place of business provides education to employees, the graduates of which are recognized as having educational attainment and degrees equal to those of graduates of a junior college or a university, after obtaining authorization from the Minister of Education. Such institutions derive their legal basis in Article 32 of the「Lifelong Education Act」

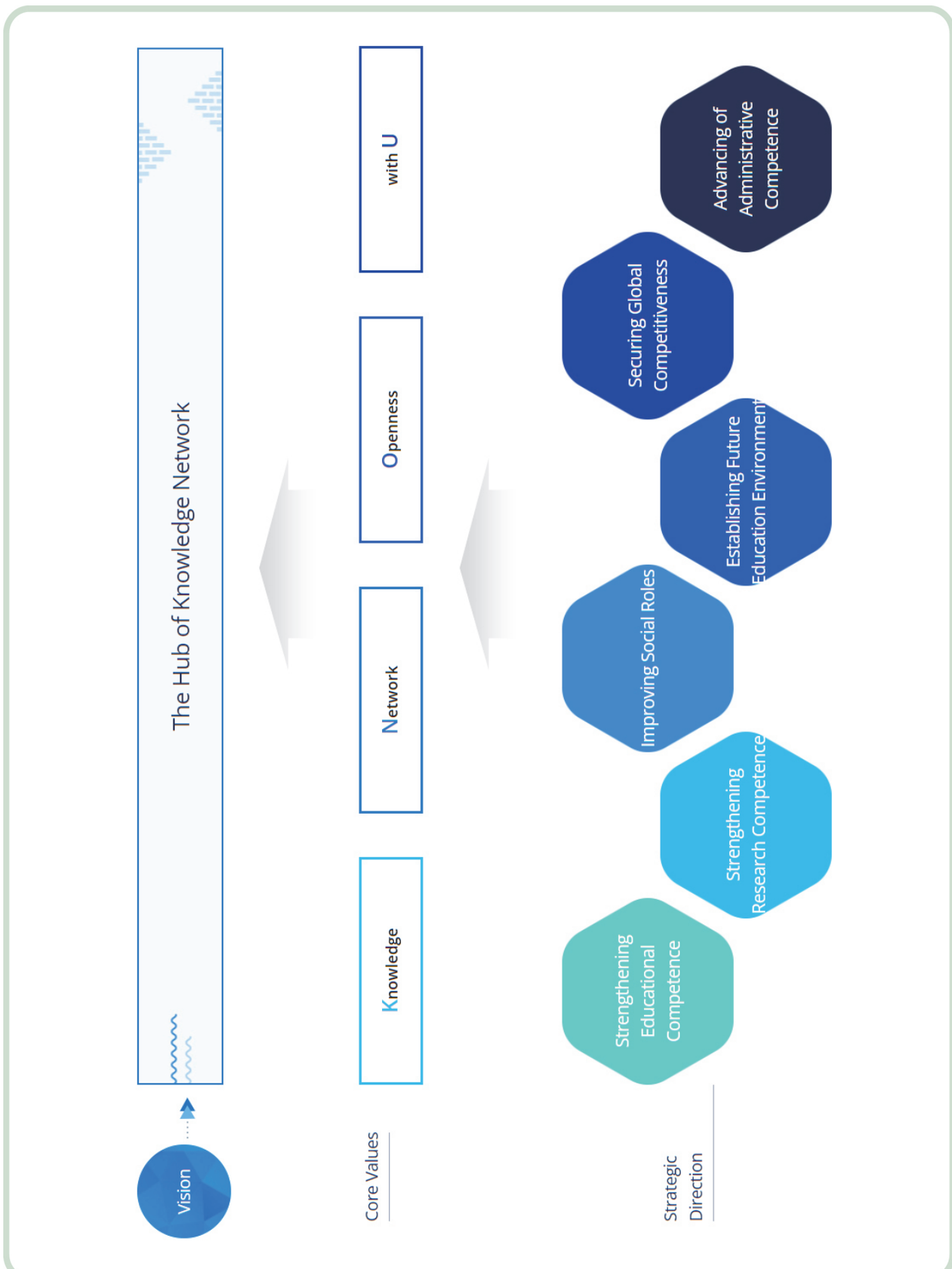
j) Distance College-Type Lifelong Educational Establishment

Definition: a lifelong educational establishment providing distance education to many specified or unspecified persons or providing them with a variety of information making use of information and communications media, the graduates of which are recognized as having educational attainment and degrees equal to those of graduates of a junior college or a university, after obtaining authorization from the Minister of Education, in accordance with Article 33 of the「Lifelong Education Act」.

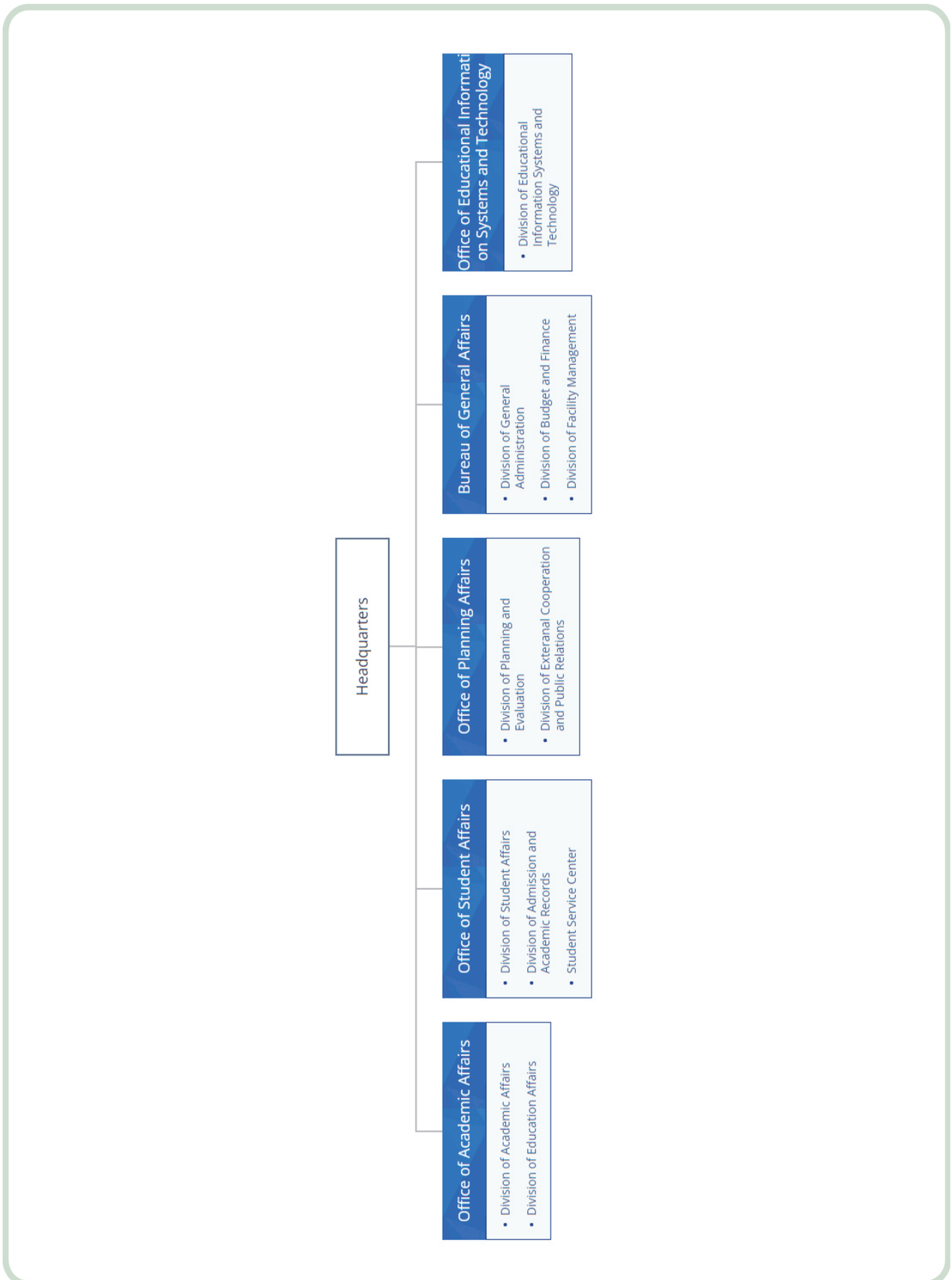
k) Polytechnic College

Purpose: to educate necessary human resources at industrial sites and support the development of the vocational ability of workers. The legality of Polytechnic Colleges is derived from Article 39~52-2 of the「Act on the Development of Vocational Skills of Workers」.

2.2.2 Case of Korea National Open University

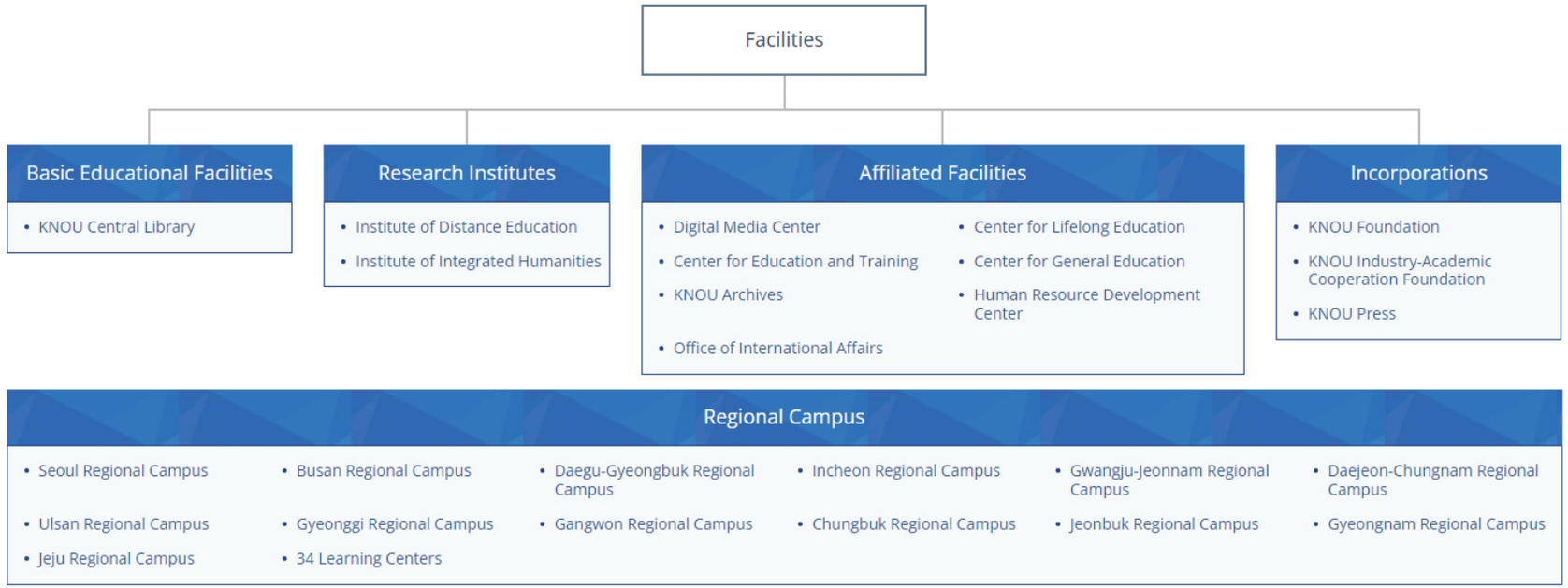


※ **Figure 2.1** Vision, Core Value and Strategic Direction of KNOU



※ **Figure 2.2** Headquarter Organisation Chart of KNOU

❊ **Figure 2.3** Educational Organisation Chart of KNOU



※ Figure 2.4 Facilities Chart of KNOU

2.2.3 Case of ODeL operation at Korea National Open University

Since its foundation in 1972, Korea National Open University has contributed to the lifelong education system of Korea with its foundation philosophy, realizing a lifelong learning society by providing the opportunity of higher education through distance learning. In Korea, colleges generally provide two semesters a year. The first semester is from March to mid-June, and the second is from September to mid-December. Students have summer and winter vacations.

a) Course completion requirements:

- ☑ Students can graduate from KNOU after completing a four-year (eight semesters) undergraduate course and meet the graduation requirements.
- ☑ New students join KNOU as freshmen and transfer students start as sophomores or juniors. Students can join KNOU as transfer students only if they have a bachelor's degree.

b) Categorization of academic subjects

- ☑ KNOU's academic subjects are divided into 'Liberal Studies,' 'Major,' and 'General Subjects.'
- ☑ KNOU provides 8 to 15 liberal studies subjects per department. 90 credits of major subjects (30 subjects) are provided so that students can acquire professional knowledge.
- ☑ Each department selects major subjects provided by other departments as general subjects.
- ☑ Students can select major or liberal studies subjects at other universities. Each department can open up to 10 general subjects

c) Credit per semester

Students can register for 18 credits or less per semester. However, KNOU provides exceptions for the following:

- ☑ 19 credits or less: New students, transfer students, and the first semester after readmission
- ☑ 21 credits or less: Students who successfully completed 'all subjects' except one-credit subjects in the previous semester and received a GPA of 3.3 or higher can sign up for an additional subject (3 credits); students may retake a subject if receiving a grade between C+ and F

d) Seasonal course

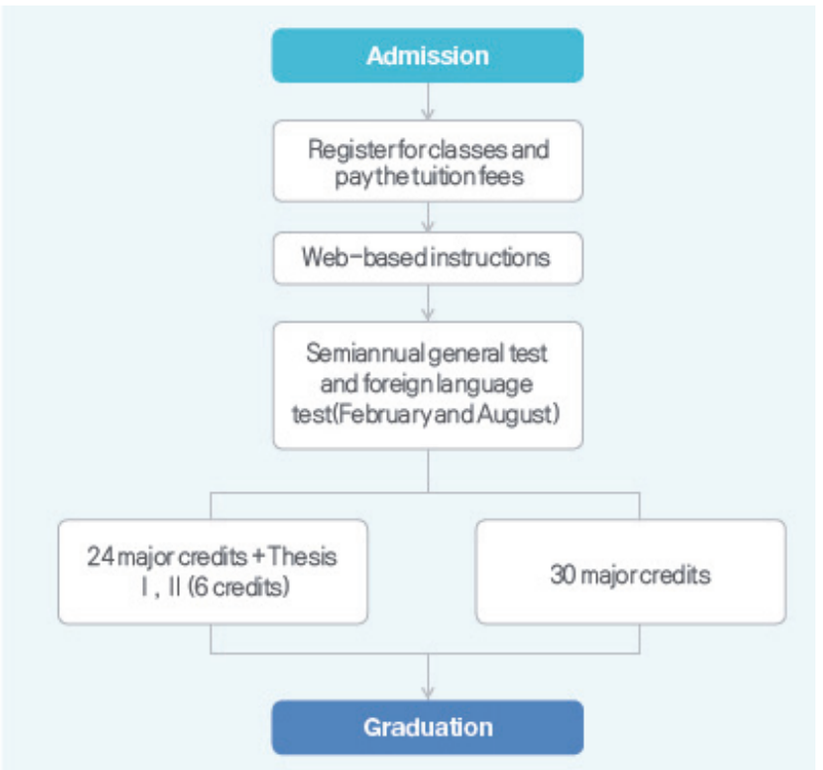
- ☑ During summer or winter vacation, students can retake subjects in which they received low marks before.
- ☑ Each department determines seasonal course subjects, and students can take up to three subjects.
- ☑ Students can retake subjects if they receive a grade between C+ and F.
- ☑ Seasonal courses are generally provided with TV, multimedia, and web-based instructions.
- ☑ Some subjects are video lectures or face-to-face lectures at regional campuses.

e) Evaluation

- ☑ Final exams are held as multiple-choice tests (question bank, by Tablet PC).
- ☑ All exams are held in designated places such as regional campuses.
- ☑ Practicum course and seasonal course are evaluated with practical test (100%) and seasonal course test (100%), respectively.
- ☑ The test is held at KNOU regional campuses or other schools designated by KNOU

f) Graduation System

- ☑ The students should meet the graduation requirements to graduate from KNOU.
- ☑ To do so, they should fulfill the years of study (No. of registration), earn credits, and pass graduation evaluation (thesis or alternatives).
- ☑ Students check their graduation requirements on the KNOU website.



※ **Figure 2.5** Graduation System of KNOU

2.2.4 Cyber Universities in Korea

a) Definition

- ☑ Cyber universities are schools, where courses between professors and students take place in a virtual space (Cyber-Space), created using information and communication technology, multimedia technology, and related software.
- ☑ When a certain number of credits are earned at a cyber university, an associate's or bachelor's degree can be awarded in the name of the university according to the Higher Education Act.
- ☑ Cyber universities have the advantage of not being restricted by time and space because courses are held in virtual spaces without going to school in person.
- ☑ Therefore, they can more easily provide higher education services to people of various ages, working people, people with disabilities, and other educationally disadvantaged groups.
- ☑ In addition to young students in their 20s, many students from educationally disadvantaged groups are currently attending cyber universities.
- ☑ As of 2023, the average annual tuition fee for cyber universities is around 2.6 million KRW (1,857 USD).

☑ The tuition at the national Korea National Open University is around 750,000 KRW per year (535 USD)

b) Cyber University Operation Status

☑ Number of Cyber Universities: Increased by 144% since establishment in 2001, Total 9 schools ('01) → Total 22 schools (current)

☑ Number of Cyber University Students (Ministry of Education Statistics. 2023)

- Admission Quota: 5,600 ('01) → 34,215 (23)
- Number of Enrolled Students: 6,220 ('01) → 130,813 (23)
- Number of Graduates: 441 ('02 → 35,742 ('22. Cumulative Approximately 420,000)

c) Admission and Degree Award

☑ Anyone who has graduated from high school or has an equivalent or higher level of education can apply to Cyber University.

☑ Students are selected based on selection criteria, including school records, college scholastic ability test scores, and at least one university-specific test (essay or oral test, aptitude test, etc.).

☑ Since the selection criteria differ by university, you must check the admission process of the university you are applying to.

☑ To receive a degree, you must complete at least 140 credits for a bachelor's degree program and at least 80 credits for an associate's degree program in major and liberal arts courses.

☑ When you complete the subjects and credits set by the university and meet the graduation requirements, you will receive a diploma with the university president's name.

☑ Since the required credits and subjects may differ by university, you must check this carefully after admission.

2.2.5 Cases of Seoul National University

a) eTL (e-Teaching & Learning) Support

To improve the quality of university education, SNU supports the implementation of more effective and efficient teaching and learning by utilizing multimedia and e-technology. SNU is conducting research and planning related to Seoul National University's eLearning policy/operation, development, and operation of the eTL system, etc.

In addition, at the beginning of each semester, a lecture improvement training program that guides the use of the ETL system, the eTL Utilization Training Workshop for Teaching Assistants, is held. Teaching assistants who support lectures complete the course to support them in the classroom, thereby faithfully fulfilling their role as teaching assistants.

b) SNUON / K-MOOC / edX

SNU develops excellent lectures on campus into online content and courses in video format and provides them for use in courses, self-study by students, and online courses for military leave students through SNUON of eTL.

NU develops lectures by leading professors at Seoul National University into online courses and operates them through K-MOOC (Korea-Massive Open Online Course), hosted by the Ministry of Education and edX, a joint organisation of MIT and Harvard.

c) Definition of "Distance learning"

"Distance learning" refers to a form of course in which teaching and learning activities are conducted without being restricted by time or space constraints using intelligent information technology and information and communication media, and is categorized as follows:

"Simultaneous distance learning" refers to a course in which the instructor and learner conduct a non-face-to-face course at the same time using intelligent information technology and information and communication media. "Asynchronous online courses" refers to courses in which instructors upload lecture content produced using intelligent information technology and information and communication media to the learning management system such as the eLearning system (hereinafter referred to as "eTL") of this school, and students study it within a designated period.

"Disaster response online courses" refers to online courses conducted for all or part of the semester according to the president's decision when face-to-face courses cannot be conducted due to natural or social disasters under the Framework Act on Disaster and Safety Management.

"Online courses with military service credit recognition" refers to online courses students take on leave of absence due to military service.

"Online courses" refers to subjects in which 70% or more of teaching and learning activities, excluding evaluation activities such as midterms and final exams, are conducted in the form of online courses.

"Hybrid course" refers to a course in which all teaching and learning activities, excluding evaluation activities such as midterm and final exams, are conducted in person for some students and remotely for the remaining students.

d) Operation Principles for Remote Classes

Online courses comprise simultaneous lectures, video lectures, and course-related activities such as Q&A and online discussions.

The course time per credit for online courses shall be at least 50 minutes.

In the case of asynchronous online courses, simultaneous interaction equivalent to an

average of at least 10 minutes per week per credit, including Q&A between the instructor or teaching assistant and students, excluding the week in which evaluation activities such as midterm and final exams are conducted, must be included separately. However, interaction may be conducted asynchronously in the case of online courses recognized for military service credits.

In principle, lectures and learning activities for online courses are conducted via eTL. However, in special circumstances, separate information and communication media may be utilized with the approval of the Remote Class Management Committee pursuant to Article 4.

In cases where there are disabled students among the students, inconveniences such as screen narration, closed captioning, or sign language interpretation must be provided for the disabled students in the video used during the course to support their access to information.

e) Online Class Management Committee

- ☑ An Online Class Management Committee (hereinafter referred to as the "Committee") shall be established to operate online courses.
- ☑ The Committee shall comprise the Director of Academic Affairs, the Director of the Vice Director of Academic Affairs, the Director of the Teaching and Learning Division of the Basic Education Institute, four faculty members, and three student members.
- ☑ The President shall appoint the Faculty Members and Student Members, and the term of office for the Faculty Members shall be two years, and the term of office for the Student Members shall be one year.
- ☑ The committee deliberates on the following matters:

1. Matters related to the operation plan for online courses
2. Matters related to online course selection, development, and operation
3. Matters related to the search for development plans for online courses and policy establishment
4. Matters related to the operation of online courses for military service credit recognition
5. Issues related to support and management for improving the quality of online courses
6. Other matters necessary for the operation of online courses

2.2.6 Cases of Korea University

In the context of Korea University, online courses' Refers to education using broadcasting and information and communication media, etc., in accordance with Article 22 of the Higher Education Act, and includes 'Flipped Class,' 'MOOC,' etc.

However, this does not apply to cases where broadcasting and information and communication media are used to transmit videos while conducting face-to-face courses, or broadcasting and information and communication media are used as auxiliary means for face-to-face courses (loading teaching materials, Q&A, discussions, etc.). Amended May 1, 2023.

2.3 Analysis of ODeL policy in Uganda

2.3.1 Policies on Distance Education at MoES in Uganda

a) ODeL Minimum Standards

Uganda's distance education policy framework is encapsulated with the 2019 National Council for Higher Education (NCHE) Minimum standards for ODeL programmes. In 2019 prior to the COVID19 pandemic, the NCHE issued nine (9) minimum standards for ODeL programmes. These standards are guiding higher education institutions to operationalise ODeL. The minimum standards are drawn around:

- ☑ Programme needs assessment
- ☑ Accreditations requirements
- ☑ Governance and Management
- ☑ Human Resources
- ☑ Infrastructure and facilities
- ☑ Course design and course materials development
- ☑ Course delivery and learner support
- ☑ Programme monitoring and evaluation.

b) Emergency ODeL Guidelines

In 2020, through the National Council for Higher Education (NCHE), the Ministry of Education and Sports (MoES) issued guidelines for higher education institutions to transition to emergency open, distance and eLearning (ODeL) systems during the COVID-19 pandemic. These systems emphasized remote learning through digital platforms such as ZOOM, learning management systems (LMSs), and other platforms as alternative modes of delivery. The guidelines, among others emphasized the need to show:

- ☑ Evidence of the existence of COVID-19 Standard Operating Procedures (SOPs) as Issued

by the Ministry of Health.

- ☑ A structure and details of the proposed ODeL model, including the equipment (e.g. flash discs/ data provision) or the available logistical arrangements of how materials will be delivered to learners.
- ☑ A list of the accredited academic programmes to be rolled out on the ODeL system.
- ☑ A list of staff qualified and ready to support the rolling out of the academic programmes through the ODeL system.
- ☑ Details of the students to be engaged.
- ☑ An undertaking by students indicating their willingness or inability to participate in the proposed arrangement.
- ☑ Evidence of approvals by the institutional academic and governing organs

The guidelines were of ad hoc nature and were to guide the implementation of distance education as an alternative mode of delivery renewable on an annual basis during the time of the pandemic. The guidelines were to stop as soon as the COVID-19 pandemic was over. After the Pandemic ODeL development and implementation was to continue being guided by the ODeL minimum standard.

c) Education and Sports Sector Digital Agenda Strategy (2023/24 - 29/30)

In 2020/21, the MoES set up a digital agenda technical committee to develop an Education and Sports sector Digital Agenda Strategy (DAS). The strategy was launched by the Minister of Education and Sports in August 2024. The DAS provides a holistic vision of the Government and its institutions to integrate information and communication technology in teaching, learning and assessment and governance of the education system in the period 2023/24 - 29/30. One of the strategies of the digital agenda is establishment of an Open University of Uganda whose sole pre-occupation would be to offer educational opportunities to national and international students using only distance education approaches. For a long time the Open University of Uganda has remained an unfunded priority of the Ministry of Education and Sports.

d) Digital infrastructure

To enhance ICT infusion in the economy of the Government of Uganda, through the Ministry of ICT and National Guidance, has invested in digital infrastructure such as fibre back borne. The Uganda National Data Transmission Backbone infrastructure (NBI) spans approximately 4000 kilometers. The NBI delivers connectivity to the last mile user. Through the Uganda Communications Commission, ICT labs have been set up in schools. In some schools, learning platforms like KOLIBRI (a free learning tool) has been set up by the Government. The Government has integrated ICT as a subject but has emphasized teaching with ICT as a method in curriculum implementation in lower and upper secondary school levels.

e) Legal and ethical Frameworks

The Ministry of ICT and national guidance has established legal and ethical policies and frameworks that are guiding the country in data collection, privacy and cyber security. In the Education sector, these policies are supporting the safe use of digital learning platforms. Laws such as data protection and privacy act complement educational initiatives to ensure ethical standards in digital education.

2.3.2 Proposals to link policies on distance education of MOES and Mak

※ Table 2.1 Policies and linkages with Mak University ODeL

Policy	Link with Makerere University ODeL
ODeL Minimum Standards	• Is informing the revision of the Makerere University Policy on ODeL 2015 • Is informing the revision and development of ODeL academic programmes
Emergence ODeL Guidelines	• This expired with the ending of COVID-19 restrictions
Digital Agenda Strategy	• Is informing the revision of the Makerere University Policy on ODeL 2015 • Is informing investments in ODeL infrastructure • Is informing ODeL research • Is informing ODeL staff capacity development • Is informing ODeL content development • Is informing all aspects of digital teaching, learning, research and training
Digital infrastructure	• Is informing investments and maintenance of digital learning infrastructure
Legal and ethical frameworks	• These are informing the Makerere University ICT policy

2.4 Analysis of the Current Status of ODeL at Makerere University

2.4.1 Current Status of regulations and school rules related to ODeL at Mak

Mak has an ODeL Policy which was approved in 2015 by the Makerere University Council. The Policy established the Institute of Open Distance and eLearning (IODeL) at Makerere University which reports to the Deputy Vice Chancellor Academic Affairs.

This policy has several rules that provide the specific mandate of IODeL and Academic units that operate ODeL programmes at Mak. The specific rules related to IODeL are listed below.

- ☑ Initiate continuous staff training for effective delivery and management of ODeL programmes in all academic units in the University.
- ☑ Run training and development programmes and courses intended to build pedagogical capacity in the discipline of ODeL across the University.
- ☑ Develop ODeL pedagogy and andragogy programmes.
- ☑ Carry out continuing capacity-building for ODeL managers, administrators, practitioners, tutors and study materials developers.
- ☑ Provide oversight to academic units while developing/reviewing proposals and curricula for programmes to be offered through ODeL.
- ☑ Carry out advocacy in ODeL at institutional! and national level.
- ☑ Market Makerere University, ODeL expertise to various stakeholders.
- ☑ Manage ODeL staff, infrastructure and resources.
- ☑ Manage and coordinate up-country study centres and activities.
- ☑ Undertake appropriate planning, of both short and long term, strategic dimensions for ODeL programmes.
- ☑ In collaboration with DICTS, provide education! technology support to all academic units.
- ☑ Sensitize all students in ODeL-delivered programmes about the ODeL mode of delivery xiii. Fund raise for the development of ODeL.
- ☑ Initiate policies and regulations for the usage of Makerere University ODeL study materials and resources by third parties, in conformity with institutional regulations and national laws.

2.4.2 Current Status of ODeL operation (DDD Description, number of subjects, etc.) at Mak

Mak has designed an instructional design template to guide in the development of ODeL courses called a Detailed Design Document (DDD). The DDD is an instructional design blueprint for online courses. Before a course unit is uploaded on the learning management system, a DDD for that course must be developed. The DDD has eight parts as shown in the figure below starting from step 1.

❊ **Figure 2.6** DDD Production Steps

After developing the DDD, its content is uploaded through the following steps:

- ☑ Accessing the course on MUELE.
- ☑ Designing the welcome message.
- ☑ Creating the resources and tools folder..
- ☑ Uploading resources and tools in the created folder.
- ☑ Creating and renaming topics.
- ☑ Creating lessons and populating them.
- ☑ Creating links to resources and tools

- ☑ Creating and linking learning activities e.g. assignments, discussion forums, quizzes etc.
- ☑ Reality check to ensure every part is working well e.g. if the links are producing the right resource or activity.

Currently, Makerere University is running eight (8) distance learning programmes (5 Bachelors, 2 Masters and 1 PhD) as listed below.

- ☑ Bachelor of Commerce External
- ☑ Bachelor of Education External
- ☑ Bachelor of Science External
- ☑ Bachelor of Agricultural and Rural Innovation External
- ☑ Bachelor of Youth and Development Work
- ☑ Master of Public Health Distance
- ☑ Master of Instructional Design and Technology
- ☑ PhD in Instructional Design and Technology (by research only)

The university is developing the following distance/online learning programmes:

- ☑ Post graduate Diploma in Instructional Design and Technology
- ☑ PhD in Instructional Design and Technology by coursework and research.

2.4.3 Methods to Operate ODeL at Makerere University

ODeL at Mak is operationalized by the IODeL which provides professional pedagogical ODeL skills and also manages the front end of MUELE.

IODeL works hand-in-hand with the DICTS which manages the back-end of MUELE. They install, maintain, upgrade, and optimize the operations of the servers.

- ☑ IODeL trains faculty in the design of ODeL courses using the DDD.
- ☑ IODeL trains faculty in uploading the courses on MUELE based on the DDDs.
- ☑ IODeL trains faculty in the use of functionalities of MUELE.
- ☑ IODeL trains faculty in the ODeL assessment modalities.
- ☑ IODeL trains students in the use of MUELE for learning.
- ☑ IODeL provides support on the access and use of MUELE.
- ☑ IODeL coordinates 32 learning champions who provide support and mentorship in ODeL related activities.
- ☑ IODeL supports faculty in scripting, recording and editing of audiovisual content production.

2.4.4 Difficulties/challenges of running ODeL at Makerere

- ☑ Inadequate computer labs for the students and faculty to use.
- ☑ Lack of a multimedia studio for the faculty to record audiovisual content.
- ☑ Server capacity is low. Sometimes when many users are accessing MUELE at the same time the server fails and users cannot log in.
- ☑ Unstable connectivity for the students and faculty.
- ☑ Wrong attitude among some staff and students in the use of ODeL approaches.
- ☑ The number of staff with skills to develop engaging ODeL courses is still low.
- ☑ The number of staff with skills to deliver engaging ODeL courses is still low.
- ☑ Running proctored exams is not yet possible.
- ☑ Lack of skills in audiovisual production of content for teaching and learning.

2.4.5 Current status of ICT infrastructure for ODeL and Makerere

The enterprise IT infrastructure that supports ODeL at Makerere comprises.

a) Network Infrastructure:

- ☑ 5Gbps of dedicated bandwidth delivered to all institutional premises via fiber optic connections.
- ☑ Wireless internet access under the network code-named Makair.
- ☑ Support for educational roaming (EDUROAM), enabling seamless internet access for students and staff from participating institutions globally.

b) Learning Content Delivery:

- ☑ A state-of-the-art multimedia studio for recording and delivering high-quality learning content.
- ☑ A smart classroom at the College of Computing and Information Sciences (CoCIS), equipped with advanced teaching and learning technologies.

c) Data Centre:

- ☑ On-Premises Infrastructure: Makerere University has on-premises data centre to host critical applications and services

d) Learning Management System (LMS):

- ☑ Platform: Makerere University uses Moodle as its primary Learning Management System (LMS). Moodle is an open-source platform that supports course management, content delivery, and student engagement.
- ☑ Features:
  - Course creation and management.
  - Assignment submission and grading.
  - Online quizzes and exams.
  - Discussion forums for student interaction.
- ☑ Accessibility: The LMS is accessible to students and staff both on and off-campus, provided they have an internet connection.

e) Digital Content and Resources:

- ☑ E-Library: Makerere University offers access to a comprehensive digital library with e-books, journals, and research databases. This is critical for supporting ODeL students.
- ☑ Open Educational Resources (OER): Makerere is increasingly adopting OER to reduce costs and improve access to learning materials.

f) Specialized Facilities:

- ☑ Specialized computer labs for engineering programs, equipped with software and tools to support technical training.

g) Collaboration Tools:

- ☑ Virtual Classrooms: Tools like Zoom, and Big BlueButton, are used for live lectures, webinars, and group discussions.
- ☑ Communication Platforms: Email, instant messaging, and discussion forums are used to facilitate communication between students and instructors.

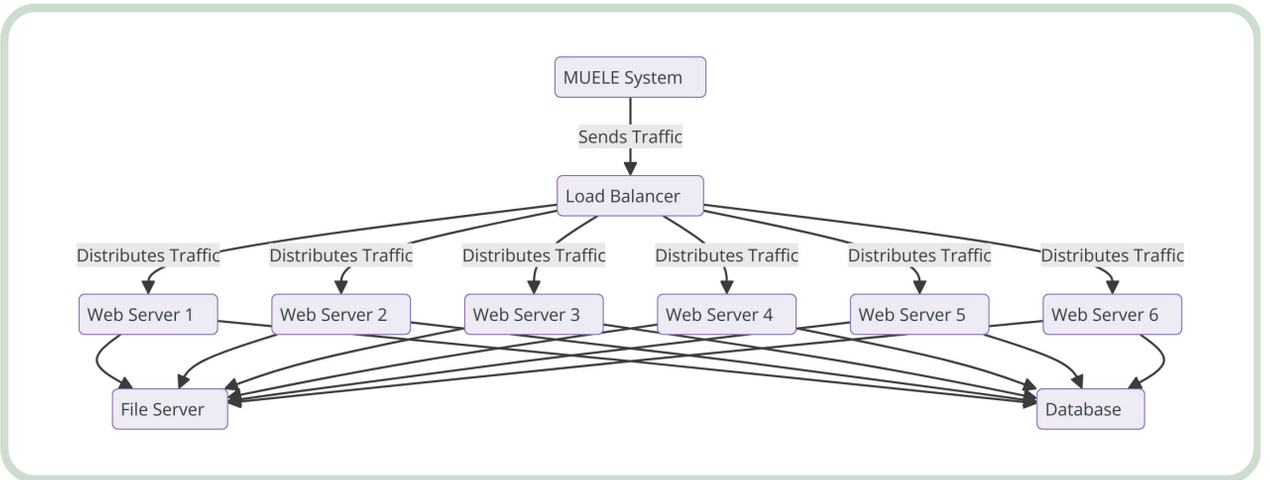
2.4.6 Current Status of Operating MUELE

The MUELE system is currently set up on two physical servers. One hosts the application while another server hosts the database. This architecture was adopted for purposes of load-balancing traffic in order to maintain acceptable user experience.

The Directorate for ICT Support (DICTS) is mandated with designing the system architecture, implementing & upgrading the system, securing MUELE as well as ensuring that it is accessible and usable by legitimate users.

The Institute of Open, Distance and eLearning (IODeL) is responsible for training of users and

managing their access privileges on the system. The system for operating MUELE is as in the figure below.

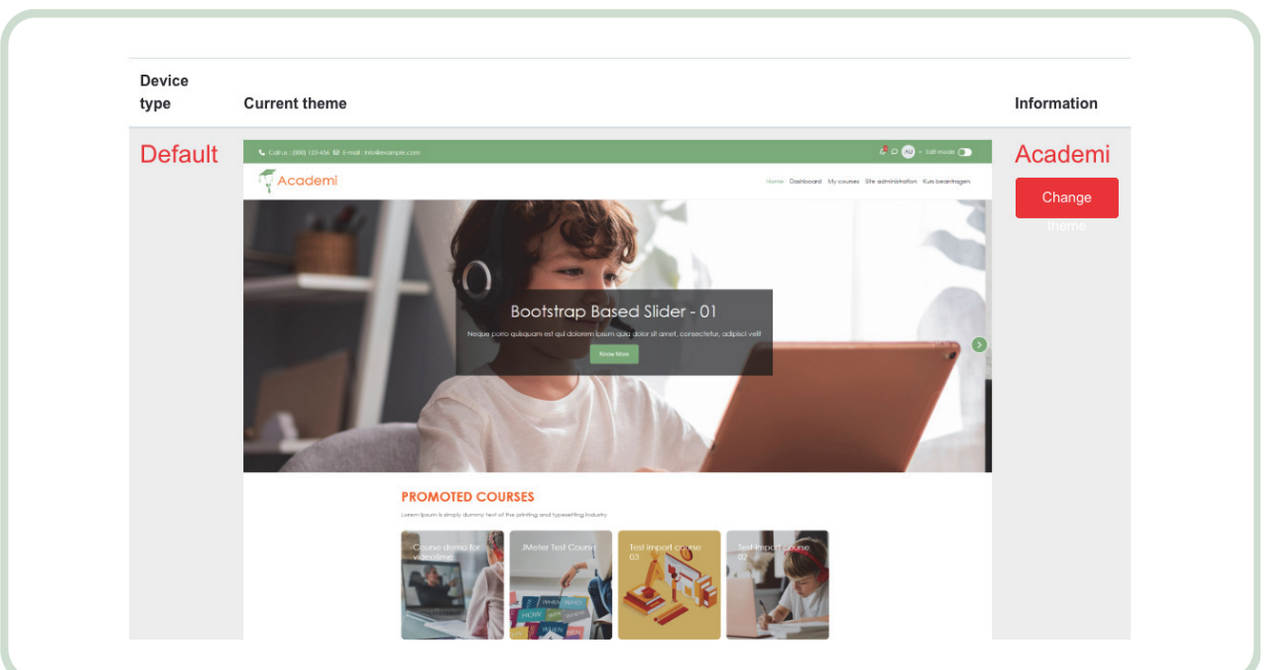


❊ **Figure 2.7** System for operating MUELE at Mak

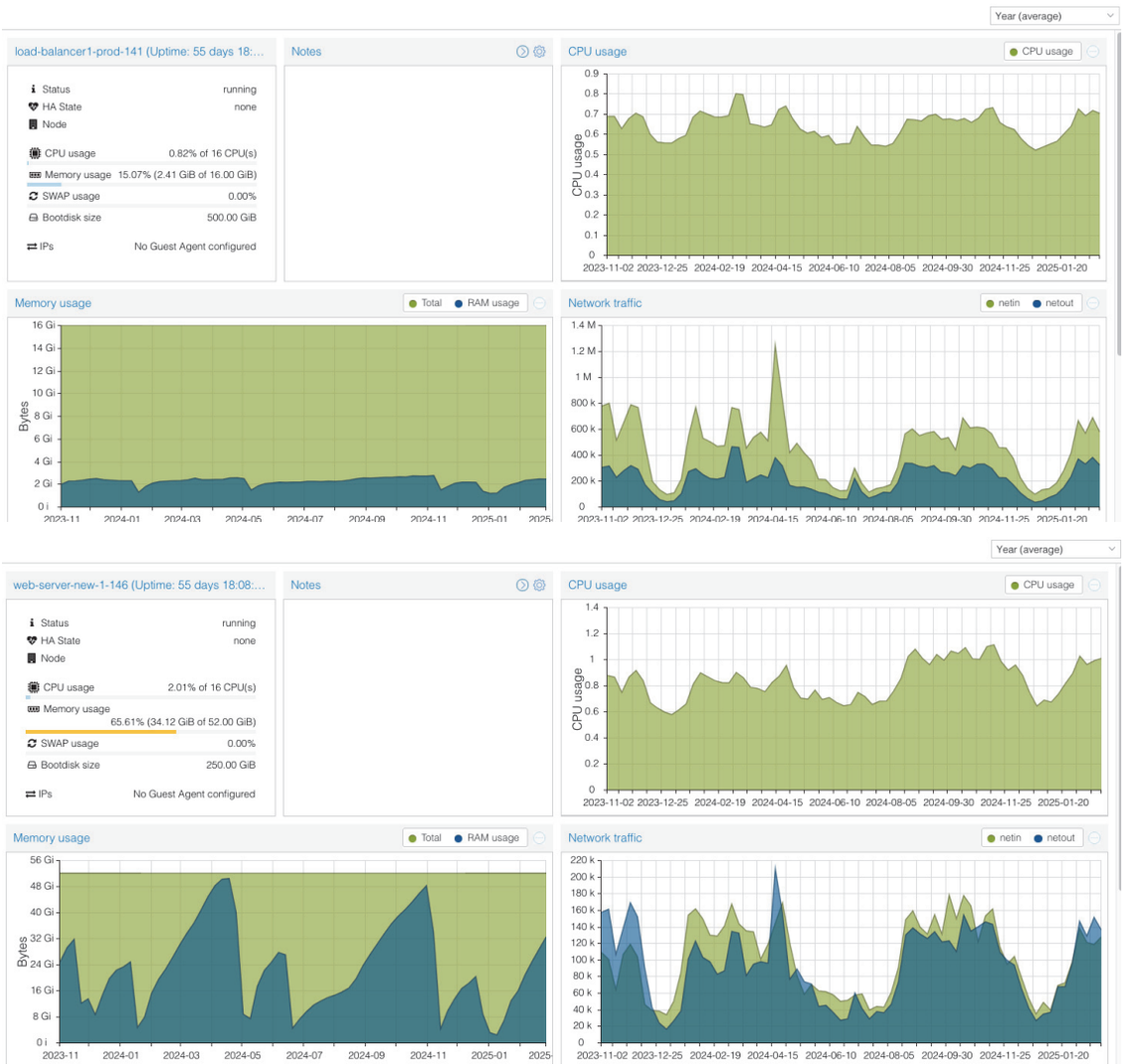
2.4.7 Performance of MUELE from Nov 2023 to Jan 2025

a) User Interface

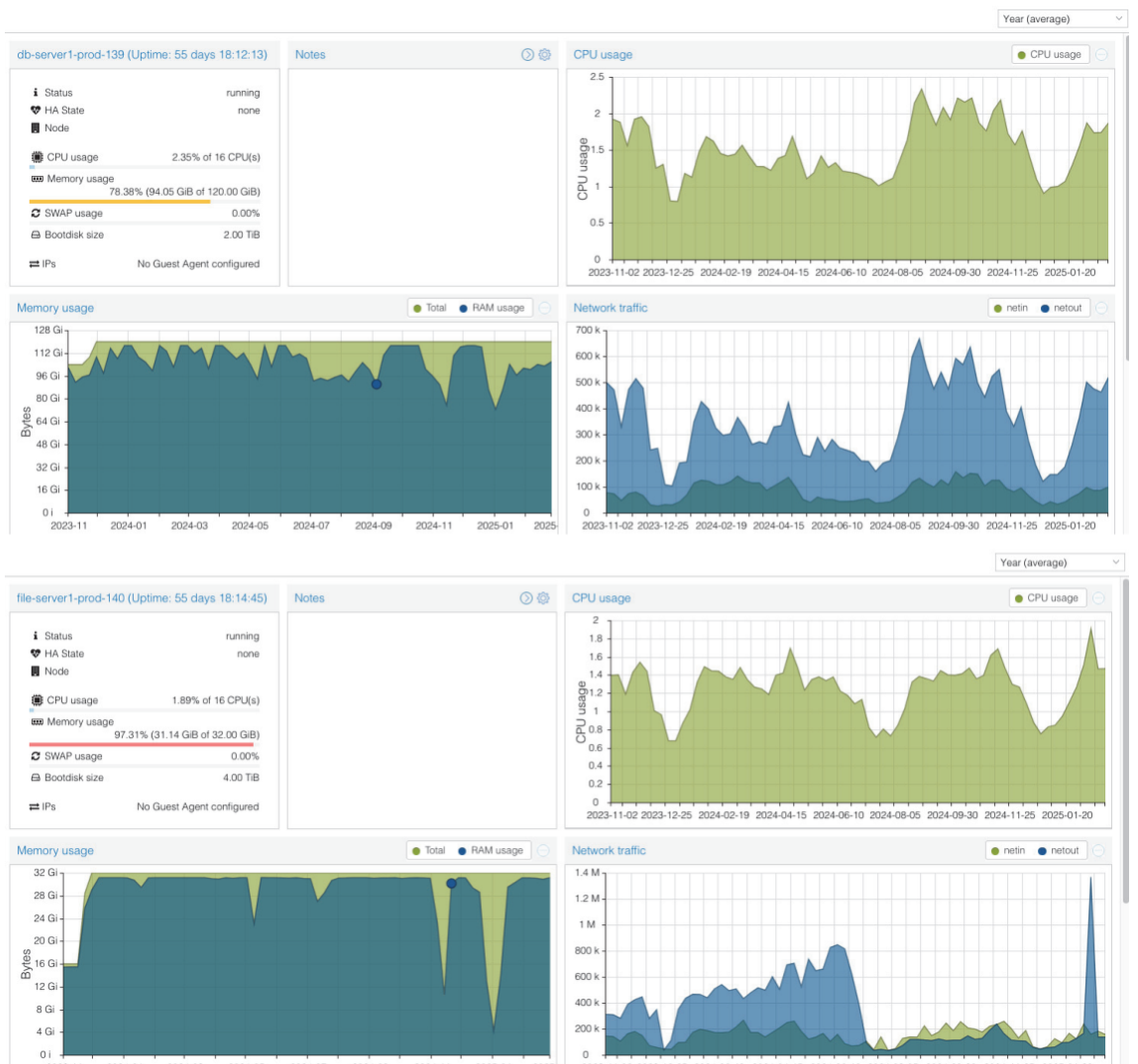
The system is currently using the 'Academic' theme – version 4.2.2 which offer features such as a responsive layout, multi-browser compatibility, multi-lingual support, configurable footer social media links, homepage slider, promoted courses, site features and additional theme preset styles.



❊ **Figure 2.8** User Interface of MUELE



❊ **Figure 2.9** Average System Performance (UP) & Web Server Performance (Down)



※ Figure 2.10 Database Performance (UP) & File Server Performance (Down)

2.4.8 Challenges with the Current IT Infrastructure

a) Insufficient bandwidth

☑ The university currently consumes 5 Gbps of bandwidth per month for a user of 40,000 (37,000 students and 3,000 staff). In order to effectively support ODeI activities, the bandwidth should be increased to 7 Gbps in 2025 and 10 Gbps by 2030.

b) Obsolete infrastructure

☑ Most of the core switching infrastructure on the University network is obsolete and therefore needs to be replaced in order to effectively support ODeI.

☑ Insufficient number of multimedia studios that support ODeI activities.

c) IT skills gap

- ☑ There is a significant IT skills gap among personnel in the implementation and support of inclusive eLearning technologies.
- ☑ The ICT personnel at Makerere need training in current IT technologies that enable inclusive eLearning.

d) Digital Divide and Connectivity Issues:

- ☑ The digital divide, marked by inadequate internet connectivity and insufficient access to digital devices, creates a significant barrier to student engagement in online education.

03

ODeL Capacity

03

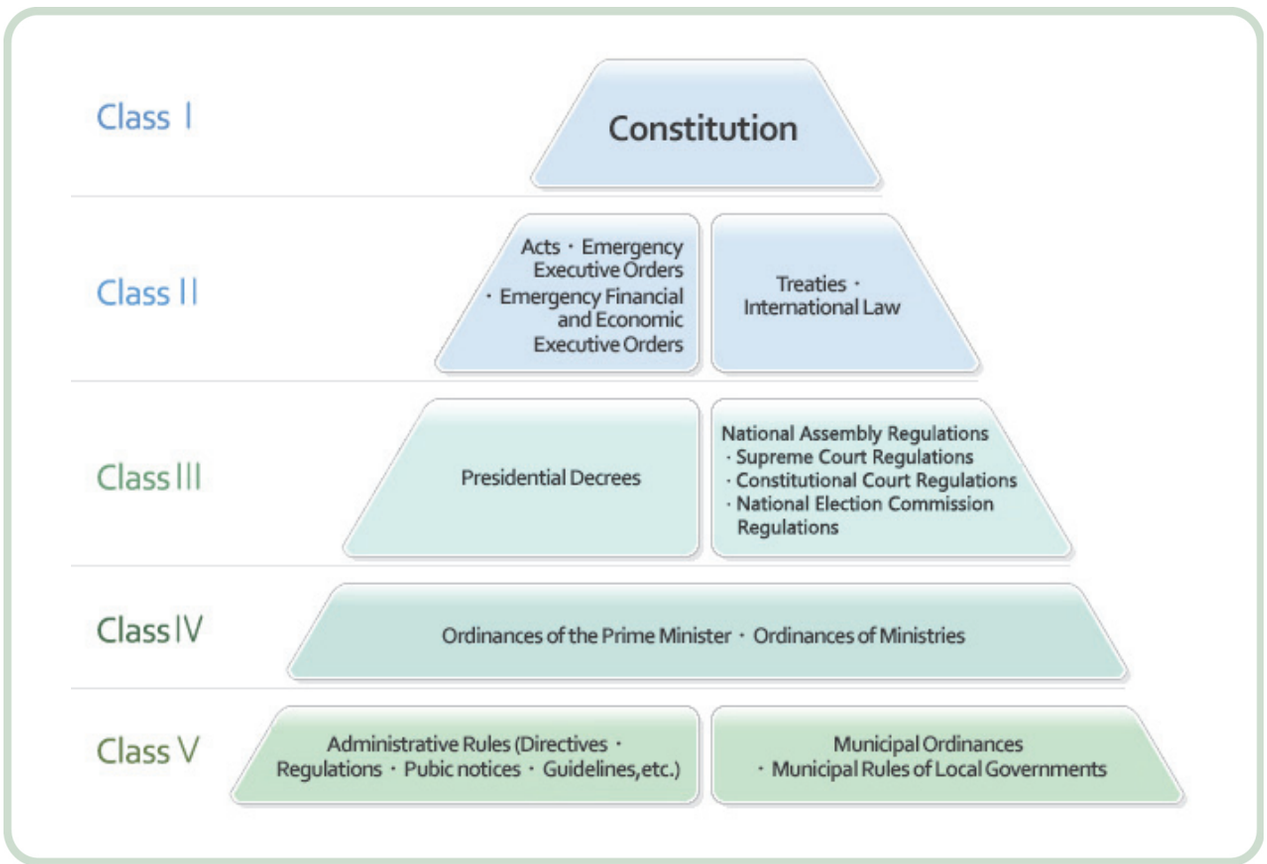
ODeL Capacity

3.1 Improvement Plan on Regulations and School Regulations

3.1.1 ODeL Related laws in Korea

Korea has made significant advancements in Open, Distance and eLearning (ODeL), supported by a strong legal and policy framework that promotes digital learning and educational innovation. The country's foundation for ODeL is rooted in laws such as the Lifelong Education Act, which provides the legal basis for offering distance education through cyber universities and other accredited institutions. Additionally, the Framework Act on Education and the Higher Education Act have provisions that recognize the legitimacy of distance learning as a mode of education delivery, enabling the expansion of online degree programs and digital certification courses across all levels of education.

Moreover, the Korean government has established the Act on Promotion of Online Digital Education, which guides the development, quality assurance, and regulation of eLearning programs and platforms. This law ensures that online education adheres to national education standards, protects learners' rights, and fosters public–private partnerships for innovation. The Ministry of Education and the National Institute for Lifelong Education (NILE) are key implementing bodies overseeing compliance and promoting best practices in ODeL. These legal frameworks have positioned Korea as a leader in integrating technology into education and expanding access through flexible learning modalities. Figure 3.1 provides the categorization of the acts and subordinate laws in Korea.



❊ **Figure 3.1** Categorization of Acts and Laws in Korea

Higher Education Act

a) Article 22 (Courses)

(1) Classes of a school may be provided by such means as day courses, evening courses, seasonal courses, "**distance learning courses by broadcasting or information and communications media**", and field practice courses, as prescribed by school regulations. 〈Amended on Oct. 20, 2020〉

(2) Where it is difficult to conduct regular courses for reasons such as the occurrence of a disaster defined in subparagraph 1 of Article 3 of the Framework Act on the Management of Disasters and Safety, schools may replace **day courses, night courses, and seasonal courses with distance learning courses**, as prescribed by school regulations. 〈Newly Inserted on Oct.20, 2020〉

(3) Matters regarding the methods, attendance, evaluation, etc. of online learning courses and courses conducted outside of schools pursuant to paragraphs (1) and (2) shall be prescribed by Presidential Decree. 〈Newly Inserted on Nov. 28, 2017; Oct. 20, 2020〉

b) Article 23 (Recognition of Credits)

(1) Any of the following students (including those prior to his or her entry to relevant schools) may be deemed to have earned credits at relevant schools, as prescribed by school regulations, within the scope prescribed by Presidential Decree: 〈Amended on Aug. 13, 2013; Nov. 28, 2017〉

(4) Where any person who takes a leave of absence to enlist in the military or to complete mandatory military service pursuant to Article 73 (2) of the **Military Service Act has earned credits after taking "distance learning courses"**

Enforcement Decree of the Higher Education Act

a) Article 14 (Credit Hours)

(1) Credit hours referred to in Article 21 (3) of the Act shall be determined by schools for each course subject, based on the characteristics of the relevant curriculum, but shall be at least 15 hours each semester. 〈Amended on May 28, 2018〉

(2) Matters necessary for recognizing the completion of credit hours under paragraph (1), such as course attendance of students, shall be determined by school regulations.

b) Article 14-2 (courses)

Where it is intended to determine matters concerning the methods of giving courses by air and correspondence or methods of giving courses outside school pursuant to Article 22 (1) and (2) of "the Act by school regulations", it shall comply with the standards the Minister of Education determines in terms of the operation of courses, management of school affairs, educational facilities and installations and other matters the Minister of Education determines. [This Article was Amended on May 28, 2018].

Framework act on the promotion of digital-based distance education [Enforcement Date 25. Mar,2022.] [Act No.18459, 24. Sep, 2021., New Enactment]

a) Article 1 (Purpose)

The purpose of this Act is to ensure that high-quality distance education is provided by education institutions by prescribing fundamental matters regarding distance education and issues regarding the responsibilities of education institutions and support of the State etc. for distance education and to contribute to leading the change of future education by supporting the innovation of digital-based education through distance education

b) Article 2 (Definitions)

The terms used in this Act are defined as follows:

☑ The term "information and communications media" means a means to search, collect,

store, process, transmit, and receive information and to provide services by wire, wireless, optic, or other methods, including telecommunication s facilities under subparagraph 2 of Article 2 of the Telecommunications Business Act, broadcasting communications facilities defined in subparagraph 3 of Article 2 of the Framework Act on Broadcasting Communications Development, computers, postal items, or the like;

- ☑ The term "distance education" means any and all educational activities performed by an education institution (including those operated jointly by multiple education institutions) without having temporal or spatial restrictions, using intelligent information technologies (referring to intelligent information technology defined in subparagraph 4 of Article 2 of the Framework Act on Intelligent Informatization) and information and communications media.
- ☑ The term "distance education content" means data or information related to codes, letters, figures, colors, voices, sounds, images, video clips, and the combination thereof used for distance education

c) Article 3 (Basic Principles)

(1) The head of an education institution may operate distance education where necessary for the purpose of education. (2) The head of an education institution shall endeavor to provide students with a high-quality education by operating distance education alone or face-to-face. (3) The head of an education institution shall ensure the following in operating distance education:

- ☑ Ensuring that students are not discriminated against on the grounds of physical or mental disability, living standards, nationality, or the like;
- ☑ Ensuring that students and their protectors, including parents, can present their opinions in connection with the operation of distance education;
- ☑ Ensuring that faculty expertise is respected in relation to the operation of distance education

Instructions on the operation of distance learning courses at universities, etc.(by Ministry of Education)

a) Article 1 (Purpose)

This instruction aims to secure the quality level of distance learning operated by universities, etc. by stipulating the operating standards for distance learning at educational institutions according to Article 12 of the Distance Learning Act and the details necessary for the operation of distance learning using broadcasting, information and communication media, etc. according to Article 22 of the Higher Education Act.

3.1.2 ODeL related regulations at Korea National Open University

KNOU derives its mandate from the Act on the Establishment and Operation of Korea National Open University (abbreviation: Korea National Open University Act).

a) Article 1 (Purpose)

This Act aims to regulate matters related to the establishment and operation of Korea National Open University to contribute to the guarantee of the people's right to education and the promotion of lifelong education in the country in accordance with the Framework Act on Education.

b) Article 2 (Establishment)

(1) Korea National Open university (hereinafter referred to as "National Open University"), a national school under the Minister of Education, shall be established. (2) Presidential Decree shall determine the location of the National Open University

c) Article 3 (Responsibilities of the National Open University, etc.)

(1) The head of the National Open University shall establish a mid-to-long-term development plan for the National Open University and faithfully implement it to contribute to the guarantee of the people's right to education and the promotion of lifelong education in the country. (2) The state and local governments may provide the necessary support for the National Open University to fulfill its responsibilities pursuant to Paragraph 1.

d) Article 4 (Relationship with Other Laws)

(1) This Act shall take precedence over other laws related to the National Open University. (2) Except for what is stipulated in this Act regarding the establishment, organisation, and operation of broadcasting and communications universities, the provisions of the Higher Education Act, the Educational Public Officials Act, the Act on Accounting Establishment and Financial Management of National Universities, and other laws and regulations related to higher education shall apply

Enforcement Decree of the Act on the Establishment and Operation of KNOU

- ☑ Article 1 (Purpose) This Decree aims to regulate matters delegated by the Act on the Establishment and Operation of Korea National Open University and matters necessary for its implementation.
- ☑ Article 2 (Location)
- ☑ Article 3 (Appointment of Faculty and Staff, etc.)
- ☑ Article 4 (Minimum Standards for Faculty Securing, etc.)

- ☑ Article 5 (School Rules)
- ☑ Article 6 (Affiliated Facilities, etc.)
- ☑ Article 7 (Subordinate Organisation)
- ☑ Article 8 (Higher Lifelong Education Development Committee)
- ☑ Article 9 (Monthly) Fixed Position Salary, etc.

3.1.3 Improving plan on ODeL related regulation at Mak

Mak's Improvement Plan for the Development of ODeL

Basically, there are two models in Korea: educational institutions specializing in ODeL, such as KNOU or Cyber University, and general universities, such as Seoul National University or Korea University, that conduct ODeL. KNOU or Cyber University conducts all courses online, so all regulations and facilities are established based on ODeL. Conventional universities such as Seoul National University or Korea University focus on offline courses, and online courses are implemented as a supplement.

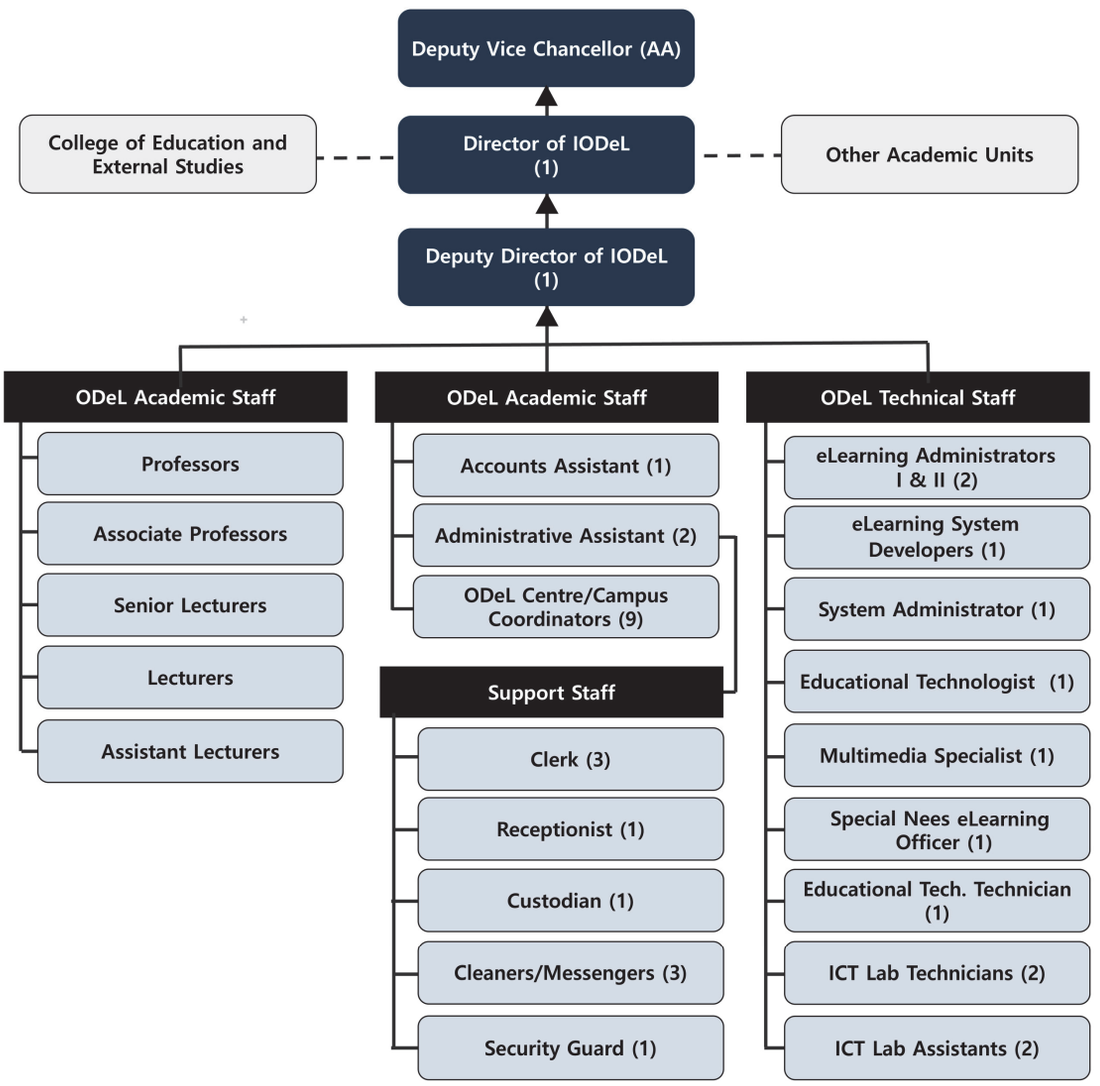
However, they are introducing LMS such as Dashboard or Blackboard for the convenience of students. Therefore, Mak judged it efficient to introduce an ODeL system to help students with course convenience and expand distance education provision as per the strategic plan.

3.2 Personnel of ODeL/IODeL

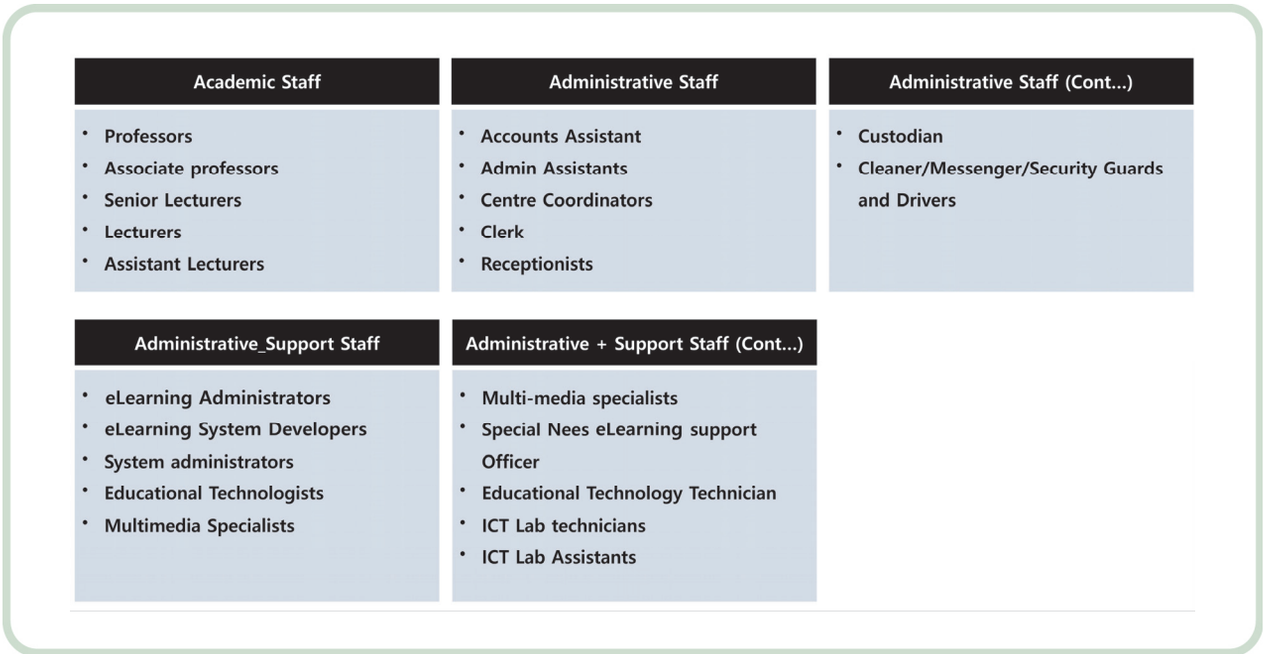
ODeL at Mak is managed and supervised by the Institute of Open, Distance and eLearning (IODeL). The IODeL is headed by a Director and deputized by a Deputy Director. It has Academic, Administrative and Support and Technical Staff. The academic staff include: Professors; Associate Professors; Senior Lecturers; Lecturers; and Assistant Lecturers. In addition, IODeL has Administrative Staff including: Accounts Assistants; Admin Assistants; Centre Coordinators; Clerks; Receptionists; Custodian; Cleaners/Messenger/Security Guards and Drivers.

However, apart from the staff positions mentioned above, IODeL requires additional administrative staff establishment with professional skills sets that will drive its mandate of supporting eLearning across the university. These include: eLearning Administrator; eLearning System Developer; System Administrator; Educational Technologists; Multimedia Specialists; Special Needs eLearning Support Officer; Educational Technology Technician; ICT Lab Technicians and; ICT Lab Assistants. The current ODeL Organisational Structure is presented in Figure 3.2 and 3.3.

3.2.1 Organisation of Operating ODeL and its roles



❊ Figure 3.2 Organisation Structure for ODeL



※ Figure 3.3 Map of Staff Required in IODeL

3.2.2 The role of ODeL academic staff is to carry out the following:

The Role of academic staff

- ☑ Provide backstopping support to all academic units in ODeL materials (online and offline) development and review.
- ☑ Provide backstopping support to all the academic units in the university in ODeL-delivered programme development, delivery, management, and administration.
- ☑ Provide continuous ODeL pedagogical training to all academic units of the University (e.g. in ODeL course design and development, content development, online facilitation, student support and other related areas).
- ☑ Sensitize all students and staff in the University on the ODeL mode of study.
- ☑ Review, before approval, all programmes, to be delivered through ODeL.
- ☑ Periodically review programmes and student support structures for ODeL-delivered programmes.
- ☑ Monitor and evaluate ODeL programme delivery in the University.
- ☑ Participate in the development of ODeL short courses, post graduate certificate programmes and research-based graduate programmes.
- ☑ Each/facilitates ODeL disciplinary academic programmes and short courses housed in the IODeL.
- ☑ Through cross appointments, teach/facilitate other discipline specific programmes in other academic units.

- ☑ Teach/facilitate ODeL disciplinary subjects/courses across the university.
- ☑ Supervise graduate students in the area of ODeL and/or other academic disciplines.
- ☑ Undertake research and publication in the field of OdeL.

Role of ODeL Technical Staff

- ☑ Researching and producing ODeL artifacts such as learning management systems and educational videos and audios.
- ☑ Administer, maintain and re-program eLearning systems and manage ICT systems for ODeL.

Role of ODeL Administrative and Support Staff

- ☑ Assist the Director in financial systems
- ☑ Assist the Director in administrative functions
- ☑ Assist the Director in support functions of the Institute

* NOTE THAT NOT ALL POSITIONS IN THE STAFF STRUCTURE HAVE BEEN FILLED

3.2.3 Required Personnel and Minimum Personnel Requirements

Required personnel and minimum required staff (70)

a) ODeL Academic Staff

- ☑ Director (1)
- ☑ Deputy Director (1)
- ☑ IODeL Academic Staff (12)
- ☑ ODeL Instructional Designers (12)

b) ODeL Technical Staff

- ☑ eLearning Administrator (2)
- ☑ eLearning Systems Developer (1)
- ☑ General System Administrator (1)
- ☑ Educational Technologist (1)
- ☑ Mufti-Media Specialist (10)
- ☑ Special Needs eLearning Officer (1)
- ☑ Educational Technology Technician (1)

- ☑ ICT Lab Technicians (2)
- ☑ ICT Lab Assistants (2)

c) ODeL Administrative and Support Staff

- ☑ Accounts Assistant (1)
- ☑ Administrative Assistants (2)
- ☑ ODeL Centre/Campus Coordinators (9)
- ☑ Clerks (3)
- ☑ Receptionist (1)
- ☑ Custodian (1)
- ☑ Cleaners./Messengers (3)
- ☑ Driver (1)
- ☑ Security Guards (2)

MINIMUM REQUIRED PERSONNEL (48)

a) ODeL Academic Staff

- ☑ Director (1)
- ☑ Deputy Director (1)
- ☑ IODeL Academic Staff (12)
- ☑ ODeL Instructional Designers (12)

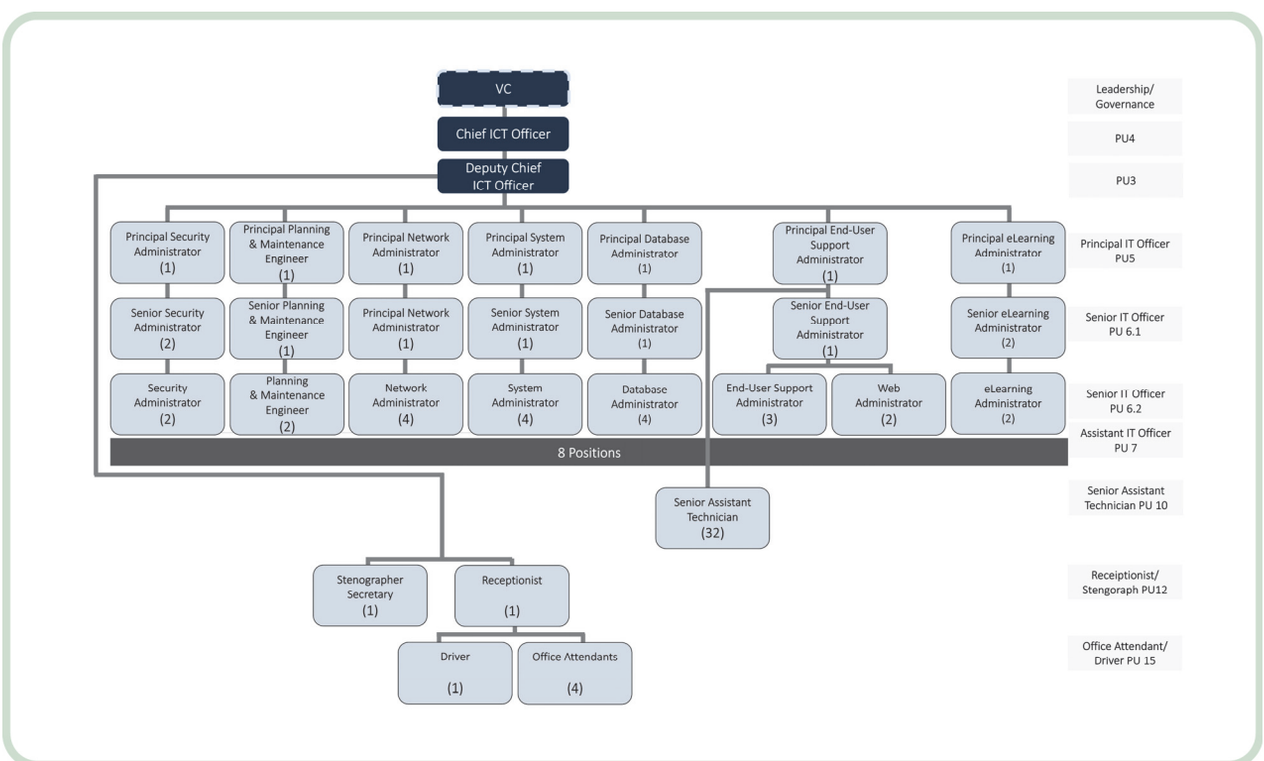
b) ODeL Technical Staff

- ☑ eLearning Administrator (1)
- ☑ eLearning Systems Developer (1)
- ☑ General System Administrator (1)
- ☑ Educational Technologist (1)
- ☑ Multi-Media Specialists (5)
- ☑ Special Needs eLearning Officer (1)
- ☑ Educational Technology Technician (1)
- ☑ ICT Lab Technicians (1)
- ☑ ICT Lab Assistants (1)

c) ODeL Administrative and Support Staff

- ☑ Accounts Assistant (1)
- ☑ Administrative Assistants (1)
- ☑ ODeL Centre/Campus Coordinators (1)
- ☑ Clerks (1)
- ☑ Receptionist (1)
- ☑ Custodian (1)
- ☑ Cleaners./Messengers (1)
- ☑ Driver (1)
- ☑ Security Guards (1)

3.2.4 Organisation and Roles for Infrastructure Operation



❊ **Figure 3.4** Approved organogram for DICTS

3.2.5 Required ICT personnel and minimum personal requirements

Required ICT Personnel (at DICTS) to Implement ODeL at Mak

The entire organisational structure of DICTS supports ODeL operations through the setup, configuration and securing of network services by the Networks and Infrastructure engineers. However, for purposes of being specific, the following technical personnel (Two eLearning Administrators; and Two Database Administrators) should be hired to particularly support the installation, configuration and securing of the Learning Management Systems that enable ODeL;

The eLearning Administrator

The eLearning Administrator is responsible for managing the Learning Management Systems (LMS) deployed by the university. This consists of constantly being apprised of its available resources such as processing power, memory, and hard drive space, and reporting any needs to have those assessed.

The eLearning Administrator will be responsible for the operational implementation and management of the eLearning environment, assuring its full-time availability to users. S/he will coordinate and supervise research and development of mandatory standards for the eLearning platform, documentation, management and monitoring of eLearning. The eLearning Administrator will report to the principal eLearning Administrator

a) Job description (M6.2)

The eLearning Administrator will coordinate team course materials to ensure that all content is successfully deployed to the e-classroom. The eLearning Administrator will in addition perform the following specific tasks:

- ☑ Oversees Learning Management System (LMS) operation and maintenance.
- ☑ eLearning Administrator will perform any patches, upgrades, service packs, hotfixes, and other routine maintenance to ensure the highest possible uptime and reliability of the LMS service.
- ☑ Provide learning management system (LMS) training and support to staff and students
- ☑ Resolves escalated LMS user issues.
- ☑ The LMS Administrator must also attend to any escalated LMS technical issues.
- ☑ Maintain and administer the University's Learning and Development Database, liaising with the School of Distance and Lifelong Learning.
- ☑ Manage LMS servers housed at DICTS in liaison with the Systems, Database and Networks Managers
- ☑ Servicing the LMS infrastructure.
- ☑ Manage the registration and access levels of users of the elearning platforms.

- ☑ Develop procedures that ensure that, for potential eLearning projects, a comparison is made on internal development versus purchase.
- ☑ Establish an on-going assessment/review of eLearning services and systems for determining which ones are obsolete and should be replaced/ redesigned.
- ☑ Handling any other duties which may from time to time be assigned by the Principal eLearning Administrator.

b) Qualifications

The eLearning administrator will be a person having at least a bachelor's degree in computer science or any ICT related field with a minimum of 2 years' experience in the field of ICT supporting a large organisation, Programming with (PHP, JAVA, MS .NET PYTHON) as well as working with open-source platforms for systems, networks and Databases in an education environment. A minimum of 1 year's experience in administering and managing any Learning Management System is essential for the role as well as knowledge and certification in eLearning and UNIX systems administration. (S) he should, in addition, have the following attributes:

- ☑ A Diploma in Education will be an added advantage.
- ☑ Good knowledge in UNIX distribution systems.
- ☑ Knowledge in Relational database Management Systems (MYSQL, POSTGRESS and MS SQL Server).
- ☑ Knowledge of the LMS software systems and ability to troubleshoot issues with those systems along with the operating system and database engine that the software resides on.
- ☑ Working knowledge of at least one major eLearning platform (Moodle).
- ☑ Understanding of structured query language (SQL).
- ☑ Should possess good process management and problem-solving skills.
- ☑ Should have well-developed interpersonal and communication skills.
- ☑ Good troubleshooting skills in determining the causes of operating errors and deciding mitigating approaches that are effective.
- ☑ A critical thinker and can use logic and reason to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- ☑ Team-oriented and can communicate with non-technical people.
- ☑ Should have excellent problem-solving skills and a methodical approach.
- ☑ Good level of information literacy.
- ☑ Good knowledge of educational technology tools.

- ☑ Good knowledge of the internet and intranet.
- ☑ Good inter-personal skills

The Database Administrator

The Database Administrator (DBA) is the operational hand of the Database Unit and shall be directly responsible for maintaining a successful database environment. The DBA responsibilities shall include designing, implementing, and maintaining the database management systems. The DBA will be in charge of designing methods to store, organize, present, use and analyze data and the database management software. The DBA shall set up university databases after identifying user needs, migrate data from old systems to new systems and regularly perform routine tests and modifications to ensure that a database is performing and running correctly. A database administrator will routinely discuss and coordinate security measures with the Principal Database Administrator and other systems administrators in the University. The Database Administrator will report to the Database Manager.

a) Job description (M6.2)

The database administrator will perform the following specific tasks:

- ☑ Design, implement, maintain and repair university databases.
- ☑ The role includes developing and designing the database strategy, monitoring and improving database performance and capacity, and planning for future expansion requirements.
- ☑ Plan, co-ordinate and implement security measures to safeguard the database.
- ☑ Undertake daily administration, including monitoring system performance, ensuring successful backups, and developing/implementing disaster recovery plans.
- ☑ Manage data to give users the ability to access, relate and report information in different ways.
- ☑ Develop standards to guide the use and acquisition of software and to protect valuable information.
- ☑ Modify existing databases or instruct programmers and analysts on the required changes.
- ☑ Test programs or databases, correct errors and make necessary modifications.
- ☑ Train users and answer questions relating to database emerging issues
- ☑ Data Archiving.
- ☑ Handling any other duties which may from time to time be assigned by the Database Manager

b) Qualifications

The Database administrator will be a person having at least a bachelor's degree in computer science or any ICT related field with a minimum of 2 years' experience in the field of database management, Database Programming (PHP, JAVA, MS .NET PYTHON) and working with open-source platforms for systems, networks and Databases in an education environment. A minimum of 1 year's experience in Oracle Database Management and Performance Tuning in the UNIX environment is essential for the role as well as knowledge and certification in Oracle (OCA) and UNIX systems administration. (S)he should, in addition, have the following attributes:

- ☑ Experience in disaster recovery measures for databases.
- ☑ Knowledge in Business risk Assessment and Database Security Measures.
- ☑ Good knowledge in UNIX distribution systems.
- ☑ Knowledge in Relational database Management Systems (ORACLE, MYSQL, POSTGRESS and MS SQL Server).
- ☑ Ability to keep up with the complexities of database technologies.
- ☑ Understanding of structured query language (SQL).
- ☑ Should have the ability to understand data and how it will be used.
- ☑ Should possess good process management and problem-solving skills.
- ☑ Should be able to work within a team and take a hands-on approach but also work autonomously.
- ☑ Should have well-developed interpersonal and communication skills.
- ☑ Good troubleshooting skills in determining the causes of operating errors and deciding mitigating approaches that are effective.
- ☑ A critical thinker and can use logic and reason to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- ☑ Should be team-oriented and able to communicate with non-technical people.
- ☑ Should be able to think logically and pay close attention to detail.
- ☑ Should have excellent problem-solving skills and a methodical approach.
- ☑ Should be self-motivated, patient and persistent.

Minimum ICT Personnel Requirements (at DICTS) to Implement ODeL

- ☑ Should be able to work within a team, take a hands-on approach, and work autonomously.
- ☑ Should have well-developed interpersonal and communication skills.

- ☑ Good troubleshooting skills in determining the causes of operating errors and deciding mitigating approaches that are effective.
- ☑ A critical thinker and can use logic and reason to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- ☑ Should be team-oriented and able to communicate with non-technical people.
- ☑ Should be able to think logically and pay close attention to detail.
- ☑ Should have excellent problem-solving skills and a methodical approach.
- ☑ Should be self-motivated, patient, and persistent

3.3 Capacity Building of staff for ODeL

3.3.1 Overview of training programme

Training Purpose

The program aims to enhance the ODeL competencies of faculties, digital content developers, and learning platform administrators to successfully implement ODeL at the MAK. Faculty, staff, and students at the MAK will learn about information ethics, copyright, and data privacy and how to effectively and efficiently utilize digital tools to implement ODeL. Instructors/Lecturers, as subject matter experts, will learn instructional design, lesson plan creation, digital content production, quality control, and how to use LMS, enabling them to develop digital content and manage courses effectively. Digital content developers will gain knowledge and skills in e-tivity (Video format) content production, editing, and quality assurance, allowing them to produce high-quality digital content. Learning platform administrators will acquire the necessary functions and expertise to operate and manage the learning platform, enabling them to support instructors and learners and ensure ODeL implementation effectively.

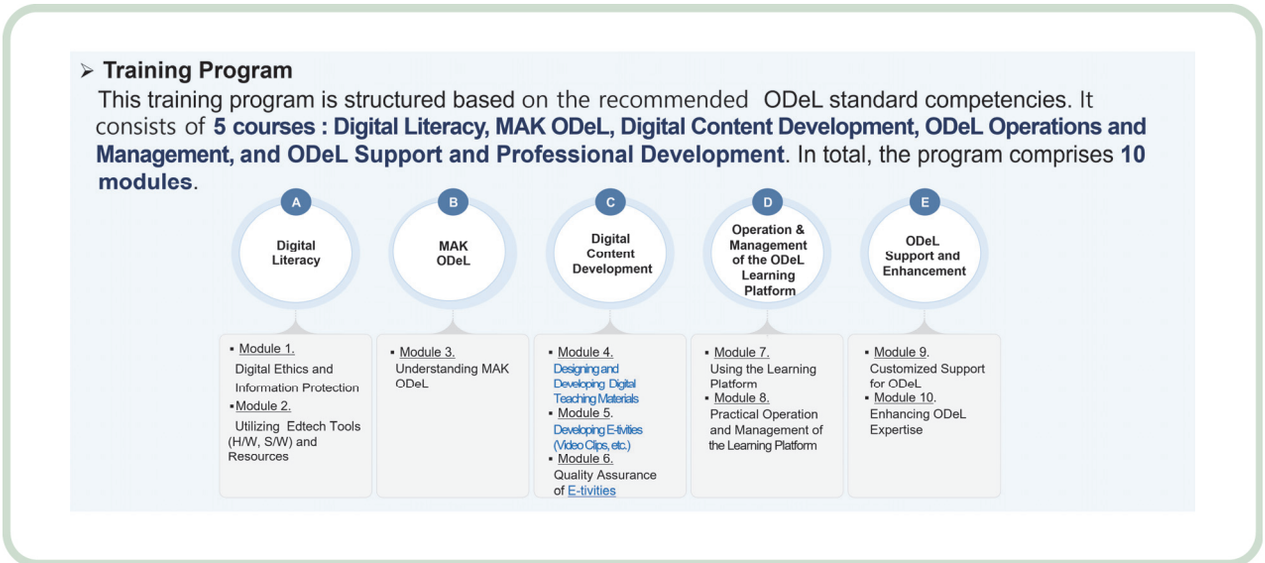
ODeL Standard Competencies (Recommendation)

The standard competencies for ODeL are essential skills that all members involved in ODeL – faculty, staff, and learners – should possess. These competencies are categorized into **three areas: digital literacy, ODeL practical competencies*, and ODeL support and professional development**, comprising a total of nine competencies. The competencies, their definitions, and related job roles are outlined in the accompanying table

* The ODeL practical competencies were derived from a literature analysis of ODeL competencies and the roles of instructors and instructional designers, structured according to the systematic instructional design model (ADDIE model) below.

❊ **Table 3.1** ODeL Standard Competencies (Recommendation)

Domain	Competency	Definition	Related Members
Digital Literacy	Digital Technology	• Acquire basic knowledge and skills for using digital media, applying them in both everyday and educational contexts	All university members
	Digital Ethics	• Understand information ethics and copyright related to digital resources necessary for utilizing digital technologies, and practice these principles in real-life and educational contexts	
ODeL Practical Competencies	ODeL Analysis	• Analyze the target learners, ODeL implementation environment, needs, and constraints to conduct ODeL effectively and efficiently	Instructor/ Lecturer
	ODeL Design	• Design educational content, assignments, digital resources, and instructional methods based on the results of the ODeL analysis	Instructor/ Lecturer
	ODeL Development	• Develop various types of teaching and learning resources, including digital content and assessment tools, necessary for implementing ODeL	Instructor/ Lecturer/Digital content developer
	ODeL Implementation	• Acquire the skills to use learning management systems and manage various types of instructional resources and activities effectively and efficiently • Oversee the overall operation of ODeL and resolve any arising issues	Instructor/ Lecturer/Tutor/ Learning platform instructor
	ODeL Evaluation	• Evaluate and improve ODeL outcomes, including students' academic achievements	Administrator/ Lecturer
ODeL support and professional development	ODeL Support	• Provide personalized support, such as tutoring and consulting, to personnel in charge of various roles for ODeL implementation	All ODeL related members
	ODeL professional development	• Organize regular workshops to help acquire and apply new skills necessary for improving ODeL practical competencies • Conduct research on best practices in ODeL, establish performance evaluation and improvement strategies, and share these with all members to continuously develop ODeL expertise	



❊ **Figure 3.5** Training Program

A. Digital Literacy

a) Module 1. Digital Ethics and Information Protection

Participants will acquire knowledge related to information ethics, copyright of digital resources, and data privacy when utilizing digital technologies in education and work contexts.

- ☑ Information Ethics
- ☑ Copyright of Digital resources and Publicly Available Resources (e.g., YouTube videos, images)
- ☑ Data Privacy

b) Module 2. Utilizing Digital Tools and Resources

Participants will learn how to use various digital tools and AI necessary for educational and work tasks.

- ☑ Using information search and analysis tools (e.g., Google)
- ☑ Using document creation tools (word processors, spreadsheets, PPT, etc.)
- ☑ Using communication tools for live lectures and online discussions (e.g., Zoom, MS Teams, Google Classroom, Moodle, etc.)
- ☑ Using collaboration tools (Google Workspace, Trello, Google Drive, Slack, etc.)
- ☑ Using OER (Open Educational Resources) content
- ☑ Utilizing AI (e.g., generative AI)

B. MAK ODeL

c) Module 3. Understanding MAK ODeL

Participants will gain an understanding of the policies, systems, current status, and development strategies, pedagogical approaches necessary for performing tasks related to MAK ODeL.

- ☑ MAK ODeL policies and regulations
- ☑ MAK ODeL operational systems and current status
- ☑ MAK ODeL strategies and development plans
- ☑ MAK ODeL pedagogical approaches

C. Digital Teaching Materials and E-tivities Development

d) Module 4. Designing and Developing Digital Teaching Materials

Participants will design and develop essential components of ODeL digital teaching materials according to Makerere University's Detailed Design Document (DDD)

- ☑ Types of digital teaching materials
- ☑ Components of digital teaching materials
- ☑ Instructional design according to Makerere University's Detailed Design Document (DDD)
- ☑ Developing different types of digital teaching materials

e) Module 5. Developing E-tivities (Video Clips, etc.)

Participants will acquire skills in using production facilities and equipment to develop E-tivities (Video Clips, etc.).

- ☑ Using and managing facilities and equipment for E-tivities development
- ☑ Types of E-tivities and development methods
- ☑ Developing various type of E-tivities

f) Module 6. Quality Assurance of E-tivities (Video Clips, etc.)

Participants will create E-tivities (Video Clips, etc.) considering quality assurance criteria and evaluate the developed content.

- ☑ Developing Mak customized quality assurance rubric for E-tivities (Video Clips, etc.)
- ☑ Case studies in E-tivities (Video Clips, etc.) quality assurance
- ☑ Practical aspects of E-tivities (Video Clips, etc.) quality assurance

D. Operation and Management of the ODeL Learning Platform

g) Module 7. Using the Learning Platform

Participants will acquire the functions and usage of the learning platform necessary for the implementation of ODeL.

- ☑ Accessing and logging into the learning platform
- ☑ Configuring classrooms and menus
- ☑ Uploading and accessing course materials
- ☑ Using menus such as announcements, Q&A, file sharing, discussion forums, and assignment submissions
- ☑ Managing and evaluating learning progress (facilitating learning and communication, monitoring and supporting progress, designing and grading online assessments, etc.)

h) Module 8. Practical Operation and Management of the Learning Platform

Participants will acquire the necessary functions and operational methods for managing the ODeL learning platform.

- ☑ Accessing the ODeL learning platform as an administrator and logging in
- ☑ Understanding User-specific menus and administrator functions
- ☑ User menus and administrative features
- ☑ Setting up classrooms and menus on the ODeL learning platform
- ☑ Managing statistics related to ODeL course operations
- ☑ Practical management of the ODeL learning platform

E. ODeL Support and Enhancement

i) Module 9. Customized Support for ODeL

- ☑ Participants will enhance their practical competencies by engaging in tutoring, satisfaction evaluations, and consulting, while also addressing any arising issues.
- ☑ Tutoring for different ODeL roles
- ☑ ODeL consulting

j) Module 10. Enhancing ODeL Expertise

Participants will engage in regular workshops, research, and presentations on the latest trends and innovative practices in ODeL, current issues in MAK ODeL, and best practices in digital content development and operation to enhance their expertise.

- ☑ Regular workshops for improving ODeL expertise

☑ Research and presentations on best practices in ODeL

☑ Annual performance evaluation and improvement plans

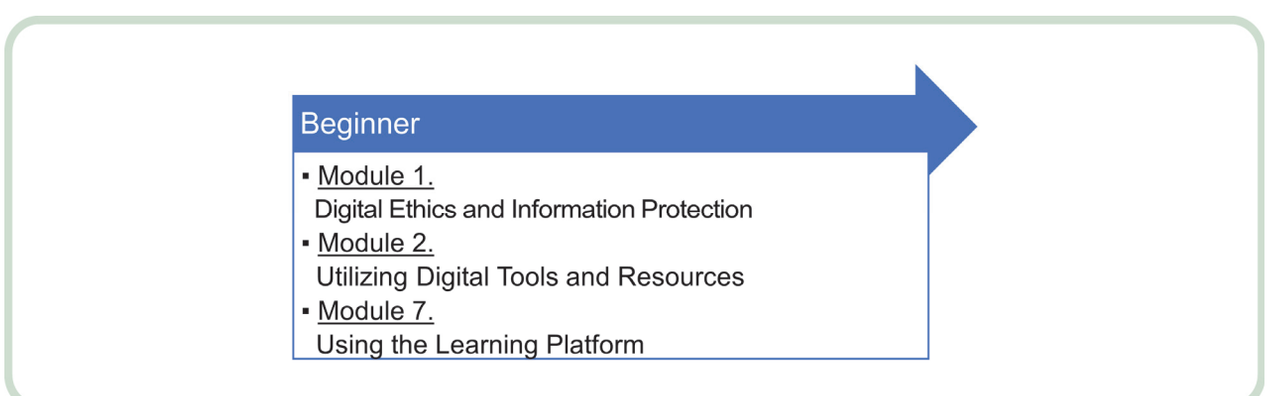
3.3.2 Road Map of Training Program by Target

The training program can be structured by selecting the necessary modules for each participant group. The training modules and road map for instructors/lecturers, tutors, digital content developers, learning platform administrators, and students are as follows

※ Table 3.2 Road Map of Training Program by Target

Role	Level	Module									
		A		B	C			D		E	
		1	2	3	4	5	6	7	8	9	10
Student	Beginner	√	√					√			
Instructors/Lecturers	Beginner	√	√	√	√		√	√			
	Intermediate	√	√	√	√		√	√		√	√
	Advanced									√	√
Tutors	Beginner	√	√	√				√			
	Intermediate	√	√	√				√		√	√
	Advanced									√	√
Digital Contents Developers	Beginner	√	√	√		√	√	√			
	Intermediate	√	√	√		√	√	√		√	√
	Advanced									√	√
ODeL Learning Platform Administrators	Beginner	√	√	√				√	√		
	Intermediate	√	√	√				√	√	√	√
	Advanced									√	√

Student

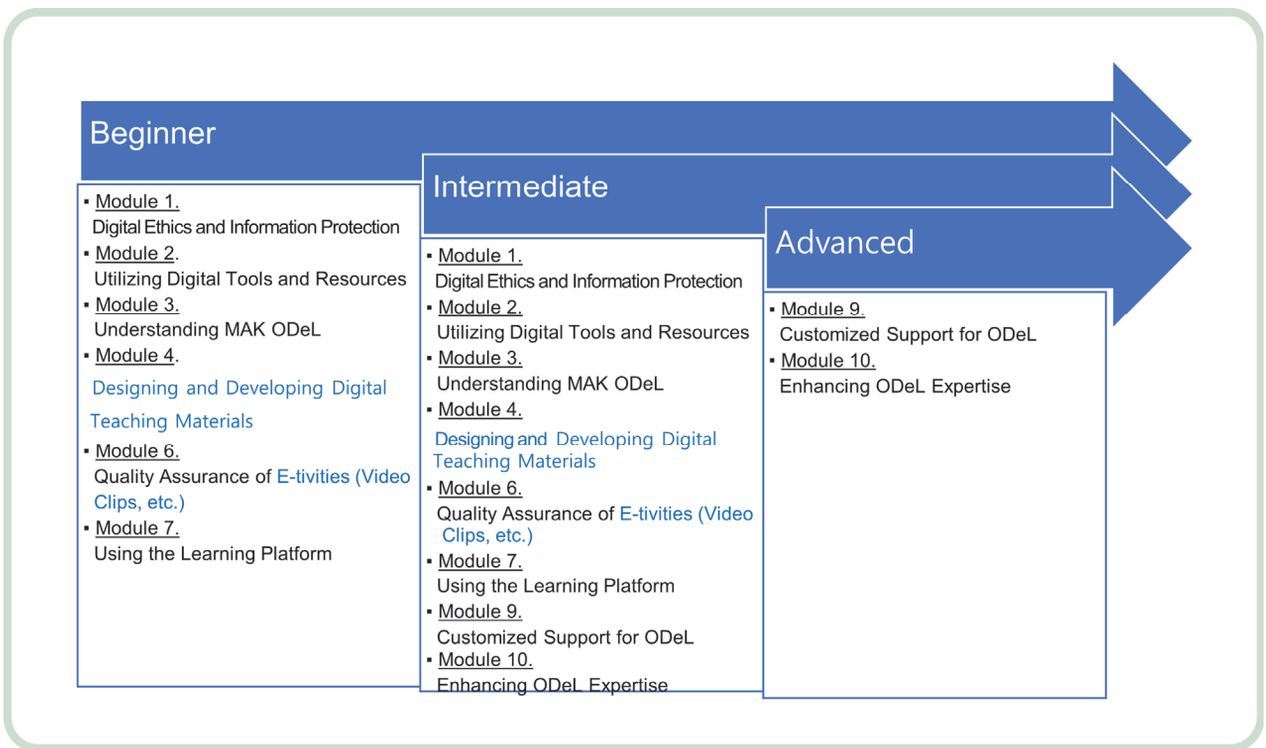


※ Figure 3.6 Training Roadmap for Student

※ **Table 3.3** Training Roadmap for Student

Module	Level	Training Content
1	Beginner	a. Information Ethics b. Copyright of Digital resources and Publicly Available Resources c. Data Privacy
2		d. Using information search and analysis tools (e.g., Google) e. Using document creation tools (word processors, spreadsheets, PPT, etc.)
7		f. Accessing and logging into the learning platform

Instructors and Lecturers



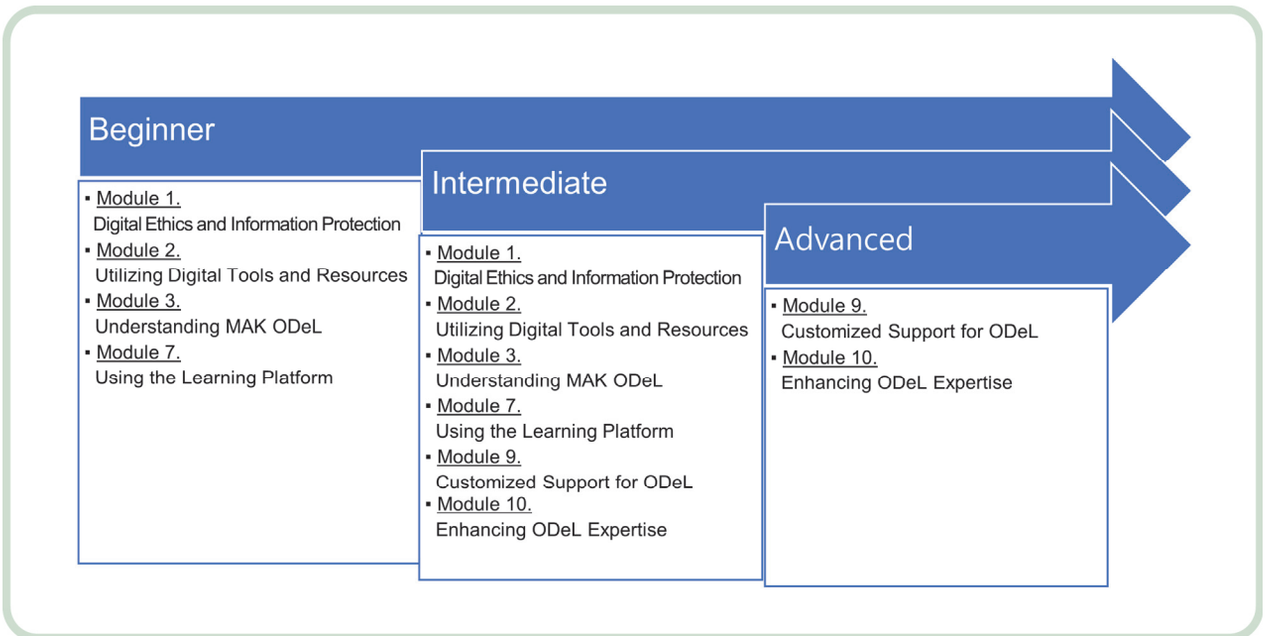
※ **Figure 3.7** Training Roadmap for Instructors and Lecturers

❊ **Table 3.4** Training Roadmap for Instructors and Lecturers

Module	Level	Training Content
1	Beginner	Information Ethics Copyright of Digital resources and Publicly Available Resources Data Privacy
	Intermediate	Case studies in Information Ethics, Copyright of Digital resources and Publicly Available Resources, Data Privacy
2	Beginner	Using information search and analysis tools (e.g., Google) Using document creation tools (word processors, spreadsheets, PPT, etc.)
	Intermediate	Using communication tools for live lectures and online discussions (e.g., Zoom, MS Teams, Google Classroom, Moodle, etc.) Using collaboration tools (Google Workspace, Trello, Google Drive, Slack, etc.) Using OER (Open Educational Resources) content Utilizing AI (e.g., generative AI)
3	Beginner	MAK ODeL policies and regulations MAK ODeL operational systems and current status
	Intermediate	MAK ODeL strategies and development plans MAK ODeL pedagogical approaches
4	Beginner	Types of digital teaching materials Components of digital teaching materials Instructional design according to Makerere University's Detailed Design Document Developing different types of digital teaching materials
	Intermediate	Practice Instructional design according to Makerere University's Detailed Design Document (DDD), Developing different types of digital teaching materials
5	Beginner	Developing Mak customized quality assurance rubric for E-tivities (Video Clips, etc.) Case studies E-tivities (Video Clips, etc.) quality assurance
	Intermediate	Practical aspects of E-tivities (Video Clips, etc.) quality assurance
6	Beginner	Accessing and logging into the learning platform
	Intermediate	Uploading and accessing course materials Using menus such as announcements, Q&A, file sharing, discussion forums, and assignment submissions Managing and evaluating learning progress (facilitating learning and communication, monitoring and supporting progress, designing and grading online assessments, etc.)
9	Intermediate	Tutoring for ODeL instructors/lecturers
	Advanced	ODeL consulting

10	Intermediate	Regular workshops for improving ODeL expertise
	Advanced	Research and presentations on best practices in ODeL Annual performance evaluation and improvement plans

Tutors



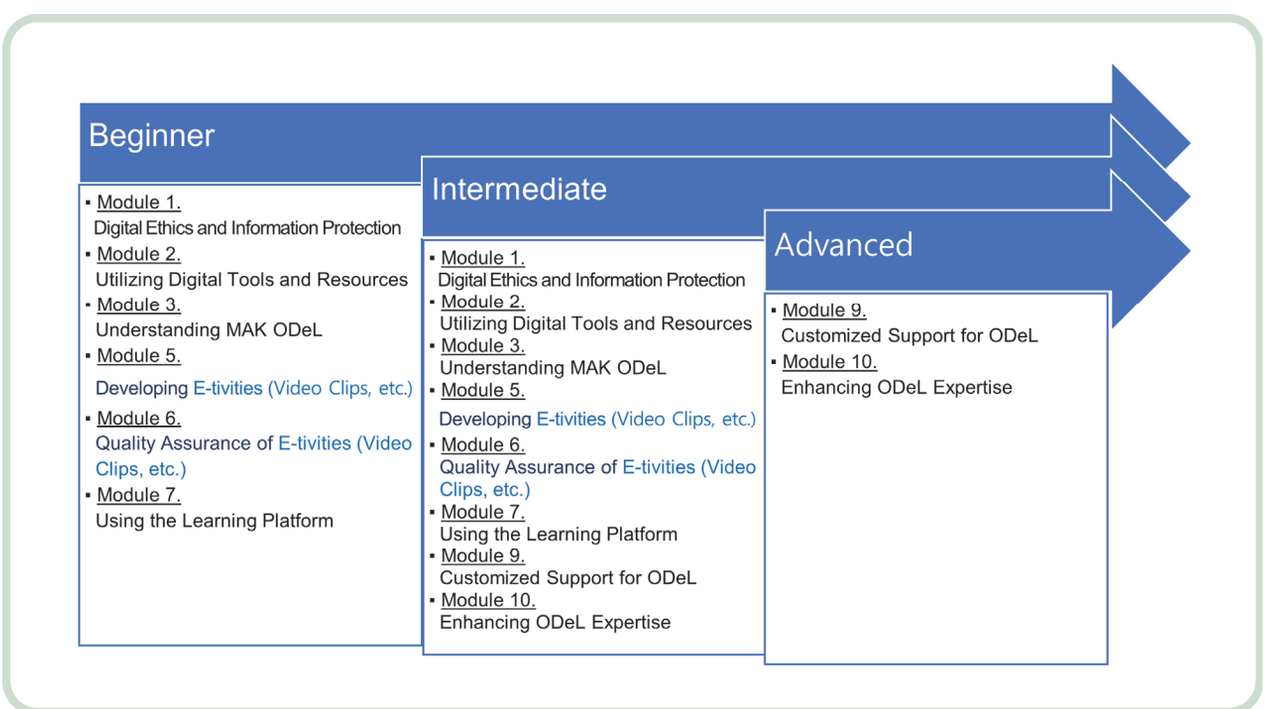
※ **Figure 3.8** Training Roadmap for Tutors

※ **Table 3.5** Training Roadmap for Tutors

Module	Level	Training Content
1	Beginner	Information Ethics Copyright of Digital resources and Publicly Available Resources Data Privacy
	Intermediate	Case studies in Information Ethics, Copyright of Digital resources and Publicly Available Resource Data Privacy
2	Beginner	Using information search and analysis tools (e.g., Google) Using document creation tools (word processors, spreadsheets, PPT, etc.)
	Intermediate	Using communication tools for live lectures and online discussions (e.g., Zoom, MS Teams, Google Classroom Moodle, etc. Using collaboration tools (Google Workspace, Trello, Google Drive, Slack, etc.) Using OER (Open Educational Resources) content Utilizing AI (e.g., generative A

3	Beginner	Mak ODeL policies and regulations Mak ODeL operational systems and current status
	Intermediate	Mak ODeL strategies and development plans Mak ODeL pedagogical approached
7	Beginner	Accessing and logging into the learning platform
	Intermediate	Uploading and accessing course materials Using menus such as announcements, Q&A, file sharing, discussion forums, and assignment submissions Managing and evaluating learning progress (facilitating learning and communication, monitoring and supporting progress, designing and grading online assessments, etc.)
9	Intermediate	Tutoring for ODeL tutors
	Advanced	ODeL consulting
10	Intermediate	Regular workshops for improving ODeL expertise
	Advanced	Research and presentations on best practices in ODeL Annual performance evaluation and improvement plans

Content Developers

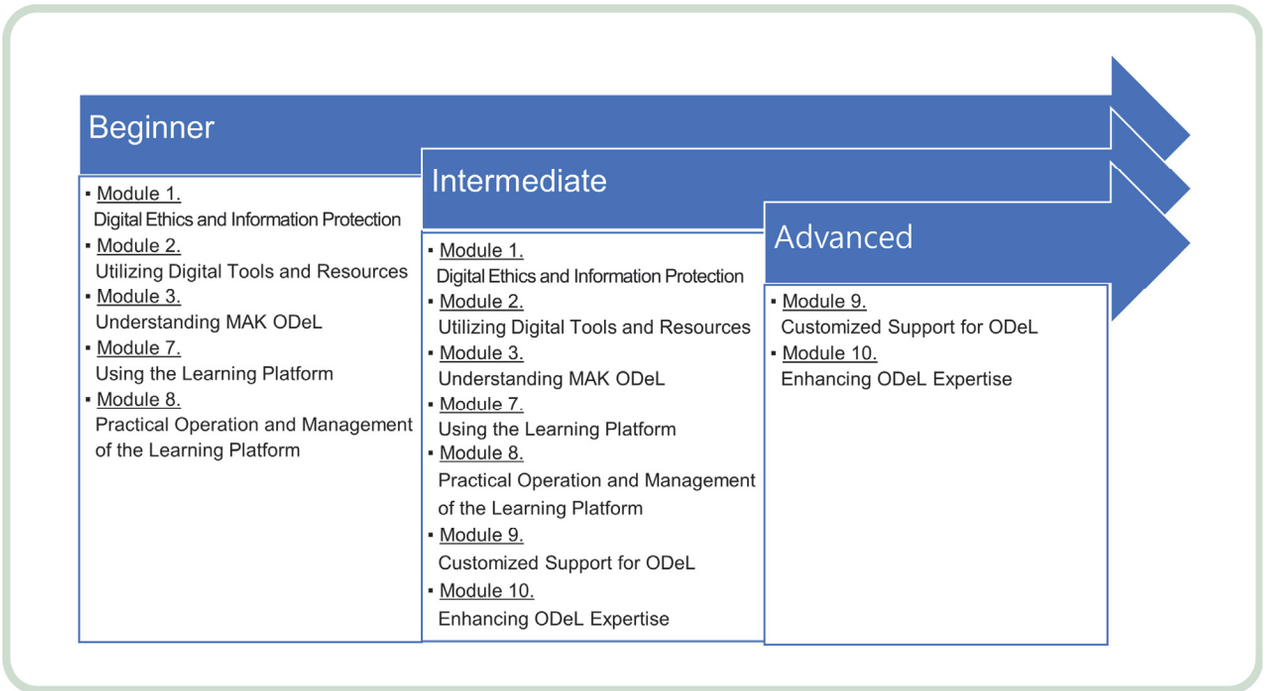


❊ **Figure 3.9** Training Roadmap for Content Developers

❊ **Table 3.6** Training Roadmap for Content Developers

Module	Level	Training Content
1	Beginner	Information Ethics Copyright of Digital resources and Publicly Available Resources Data Privacy
	Intermediate	Case studies in Information Ethics, Copyright of Digital resources and Publicly Available Resources, Data Privacy
2	Beginner	Using information search and analysis tools (e.g., Google) Using document creation tools (word processors, spreadsheets, PPT, etc.)
	Intermediate	Using communication tools for live lectures and online discussions (e.g., Zoom, MS eams, Google Classroom, Moodle, etc.) Using collaboration tools (Google Workspace, Trello, Google Drive, Slack, etc.) Using OER (Open Educational Resources) content Utilizing AI (e.g., generative AI)
3	Beginner	MAK ODeL policies and regulations MAK ODeL operational systems and current status
	Intermediate	MAK ODeL strategies and development plans
4	Beginner	Types of digital teaching materials Components of digital teaching materials Developing different types of digital teaching materials
	Intermediate	Practice Instructional design according to Makerere University's Detailed Design Document (DDD), Developing different types of digital teaching materials
5	Beginner	Using and managing facilities and equipment for E-tivities development Types of E-tivities and development methods
	Intermediate	Developing various type of E-tivities
6	Beginner	Developing Mak customized quality assurance rubric for E-tivities (Video Clips, etc.) Case studies in E-tivities (Video Clips, etc.) quality assurance
	Intermediate	Practical aspects of digital content quality assurance
9	Intermediate	Tutoring for Digital content developers
	Advanced	ODeL consulting
10	Intermediate	Regular workshops for improving ODeL expertise
	Advanced	Research and presentations on best practices in ODeL Annual performance evaluation and improvement plans

ODeL Learning Platform Administrators



※ **Figure 3.10** Training Roadmap for Learning Platform Administrators

※ **Table 3.6** Training Roadmap for Content Developers

Module	Level	Training Content
1	Beginner	Information Ethics Copyright of Digital resources and Publicly Available Resources Data Privacy
	Intermediate	Case studies in Information Ethics, Copyright of Digital resources and Publicly Available Resources, Data Privacy
2	Beginner	Using information search and analysis tools (e.g., Google) Using document creation tools (word processors, spreadsheets, PPT, etc.)
	Intermediate	Using communication tools for live lectures and online discussions (e.g., Zoom, MS Teams, Google Classroom, Moodle, etc.) Using collaboration tools (Google Workspace, Trello, Google Drive, Slack, etc.) Using OER (Open Educational Resources) content Utilizing AI (e.g., generative AI)
3	Beginner	MAK ODeL policies and regulations MAK ODeL operational systems and current status
	Intermediate	MAK ODeL strategies and development plans

7	Beginner	Accessing and logging into the learning platform
	Intermediate	Managing and evaluating learning progress (facilitating learning and communication, monitoring and supporting progress, designing and grading online assessments, etc.)
8	Beginner	Accessing the ODeL learning platform as an administrator and logging in Understanding User-specific menus and administrator functions User menus and administrative features
	Intermediate	Setting up classrooms and menus on the ODeL learning platform Managing statistics related to ODeL course operations Practical management of the ODeL learning platform
9	Intermediate	Tutoring for ODeL learning platform administrators
	Advanced	ODeL consulting
10	Intermediate	Regular workshops for improving ODeL expertise
	Advanced	Research and presentations on best practices in ODeL Annual performance evaluation and improvement plans

3.3.3 Training Program by Level

The training program is divided into beginner, intermediate, and advanced levels. Each level targets specific roles: instructors/lecturers, tutors, digital content developers, learning platform administrators, and students. The modules for each level provide tailored content based on the participants' expertise and roles.

※ **Table 3.7** Training Program by Level: Beginner

Beginner: For Students (5h)			
Module		**Training Contents**	**Duration**
Module 1	Digital Ethics and Information Protection	Information Ethics Copyright of Digital resources and Publicly Available Resources Data Privacy	1h
Module 2	UtilizingDigital Tools and Resources	Using information search and analysis tools (e.g., Google) Using document creation tools (word processors, spreadsheets, PPT, etc.)	3h
Module 7	Using the Learning Platform	Accessing and logging into the learning platform	1h

Beginner: For Instructors/Lecturers (10h)			
Module		b) Training Contents	Duration
Module 1	Digital Ethics and Information Protection	c) Information Ethics d) Copyright of Digital resources and Publicly Available Resources e) Data Privacy	1h
Module 2	Utilizing Digital Tools and Resources	f) Using information search and analysis tools (e.g., Google) g) Using document creation tools (word processors, spreadsheets, h) PPT, etc.)	3h
Module 3	Understanding MAK ODeL	i) MAK ODeL policies and regulations j) MAK ODeL operational systems and current status	1h
Module 4	Designing and Developing Digital Teaching Materials	k) Types of digital teaching materials l) Components of digital teaching materials m) Instructional design according to Makerere University's Detailed Design Document (DDD) n) Developing different types of digital teaching materials	2h
Module 6	Quality Assurance of E-tivities (Video Clips, etc.)	o) Developing Mak customized quality assurance rubric for E-tivities (Video Clips, etc.) p) Case studies E-tivities (Video Clips, etc.) quality assurance	2h
Module 7	Using the Learning Platform	q) Accessing and logging into the learning platform	1h

Beginner: For Tutors (6h)			
Module		Training Contents	Duration
Module 1	Digital Ethics and Information Protection	r) Information Ethics s) Copyright of Digital resources and Publicly Available Resources t) Data Privacy	1h
Module 2	Utilizing Digital Tools and Resources	u) Using information search and analysis tools (e.g., Google) v) Using document creation tools (word processors, spreadsheets, PPT, etc.)	3h
Module 3	Understanding MAK ODeL	w) MAK ODeL policies and regulations x) MAK ODeL operational systems and current status	1h
Module 7	Using the Learning Platform	y) Accessing and logging into the learning platform	1h

Beginner: For Digital Content Developer's (12h)s (5b)			
Module		z) Training Contents	Duration
Module 1	Digital Ethics and Information Protection	aa) Information Ethics bb) Copyright of Digital resources and Publicly Available Resources cc) Data Privacy	1h
Module 2	Utilizing Digital Tools and Resources	dd) Using information search and analysis tools (e.g., Google) ee) Using document creation tools (word processors, spreadsheets, PPT, etc.)	3h
Module 3	Understanding MAK ODeL	ff) MAK ODeL policies and regulations gg) MAK ODeL operational systems and current status	1h
Module 4	Designing and Developing Digital Teaching Materials	hh) Types of digital teaching materials ii) Components of digital teaching materials jj) Developing different types of digital teaching materials	2h
Module 5	Developing E-tivities (Video Clips, etc.)	kk) Using and managing facilities and equipment for E-tivities development ii) Types of E-tivities and development methods	3h
Module 6	Quality Assurance of E-tivities (Video Clips, etc.)	mm) Developing Mak customized quality assurance rubric for E-tivities (Video Clips, etc.) nn) Case studies in E-tivities (Video Clips, etc.) quality assurance	2h

❊ **Table 3.8** Training Program by Level: Intermediate & Advanced

Intermediate: For Instructors/Lecturers (12h)			
Module		Training Contents	Duration
Module 1	Digital Ethics and Information Protection	Information Ethics Copyright of Digital resources and Publicly Available Resources Data Privacy	1h
Module 2	Utilizing Digital Tools and Resources	Using information search and analysis tools (e.g., Google) Using document creation tools (word processors, spreadsheets, PPT, etc.)	3h
Module 3	Understanding MAK ODeL	MAK ODeL policies and regulations MAK ODeL operational systems and current status	1h

Module 7	Using the Learning Platform	Accessing and logging into the learning platform	1h
Module 8	Practical Operation and Management of the Learning Platform	Accessing the ODeL learning platform as an administrator and logging in Understanding User-specific menus and administrator functions User menus and administrative features	2h

Intermediate: For Instructors/Lecturers (12h)			
Module		**Training Contents**	**Duration**
Module 1	Digital Ethics and Information Protection	Case studies in Information Ethics, Copyright of Digital resources and Publicly Available Resources, Data Privacy	1h
Module 2	Utilizing Digital Tools and Resources	Using communication tools for live lectures and online discussions (e.g., Zoom, MS Teams, Google Classroom, Moodle, etc.) Using collaboration tools (Google Workspace, Trello, Google Drive, Slack, etc.) Using OER (Open Educational Resources) content Utilizing AI (e.g., generative AI)	3h
Module 3	Understanding MAK ODeL	MAK ODeL strategies and development plans MAK ODeL pedagogical approaches	1h
Module 4	Designing and Developing Digital Teaching Materials	Practice Instructional design according to Makerere University's Detailed Design Document (DDD), Developing different types of digital teaching materials	3h
Module 6	Quality Assurance of E-tivities (Video Clips, etc.)	Practical aspects of E-tivities (Video Clips, etc.) quality assurance	1h
Module 7	Using the Learning Platform	Uploading and accessing course materials Using menus such as announcements, Q&A, file sharing, discussion forums, and assignment submissions Managing and evaluating learning progress (facilitating learning and communication, monitoring and supporting progress, designing and grading online assessments, etc.)	3h
Module 9	Customized Support for ODeL	Tutoring for ODeL instructors/lecturers	Depending
Module 10	Enhancing ODeL Expertise	Regular workshops for improving ODeL expertise	Depending

Intermediate: For Tutors (8h)			
Module		**Training Contents**	**Duration**
Module 1	Digital Ethics and Information Protection	Case studies in Information Ethics, Copyright of Digital resources and Publicly Available Resources, Data Privacy	1h
Module 2	Utilizing Digital Tools and Resources	Using communication tools for live lectures and online discussions (e.g., Zoom, MS Teams, Google Classroom, Moodle, etc.) Using collaboration tools (Google Workspace, Trello, Google Drive, Slack, etc.) Using OER (Open Educational Resources) content Utilizing AI (e.g., generative AI)	3h
Module 3	Understanding MAK ODeL	MAK ODeL strategies and development plans MAK ODeL pedagogical approaches	1h
Module 7	Using the Learning Platform	Uploading and accessing course materials Using menus such as announcements, Q&A, file sharing, discussion forums, and assignment submissions Managing and evaluating learning progress (facilitating learning and communication, monitoring and supporting progress, designing and grading online assessments, etc.)	3h
Module 9	Customized Support for ODeL	Tutoring for ODeL tutors	Depending
Module 10	Enhancing ODeL Expertise	Regular workshops for improving ODeL expertise	Depending

04

Mid/Long Term Development Plan for ODeL

04

Mid/Long Term Development Plan for ODeL

4.1 Outline

4.1.1 Background

The Makerere University Council at its 136th meeting held on 6th and 21st of October 2015 approved the Policy on Open, Distance and eLearning (ODeL). The policy aims at mainstreaming ODeL into all academic programmes of the university so as to increase access to flexible and quality technology-supported learning. The 2020-2025 Makerere University Strategic Plan also aspires to have at least one distance (online) learning program running in each college by 2025. The same strategy is eminent in the successor strategic plan of 2026-2030. Regarding learning resources (e-Content), about 61,050 blended courses are developed and hosted on the Makerere University Electronic Learning Environment (MUELE).

It is necessary to expand and develop ODeL as a way to realize Makerere University's Vision of being “a thought leader of knowledge generation for societal transformation” and, Mission of “providing innovative and industry-aligned teaching, learning, and research responsive to dynamic national and global needs”. When implemented, the Masterplan will enable Makerere University to develop into a world-class university in Africa and beyond. The Masterplan will enable Makerere University to quench the increasing demand for accessible and inclusive education in Uganda. It will expand the accessibility of education for learners and improve the quality of education through "AI-Powered Digital Transformation” and various educational methods.

4.1.2 Mid to long term strategy

Based on the analysis of the current status of ODeL in Uganda and the recent trends in ODeL, the mid-to-long-term development strategy was established with consideration on how to meet Uganda’s economic and societal needs. In particular, future-oriented development through AI-Powered Digital Transformation of Makerere University was considered.

This mid-to-long-term development plan reflects the needs of ODeL stakeholders and is designed to enable leaner-centred pedagogy which allows learners to choose their education method and provide personalized learning.

With Implementation of this Masterplan, it is expected that there will be continued improvement in the quality of higher education in Uganda and expansion of educational

opportunities for the entire nation through ODeL. Through the Makerere University ODeL model, Makerere University's education services will be made available in Uganda, Africa, and anywhere in the world.

4.1.3 Vision of ODeL at Makerere University

The Vision of Makerere University and Mak ODeL are summarised in Table 4.1 below:

※ Table 4.1 Vision of Makerere University and Mak ODeL

Makerere University's Vision &	To be a thought leader of knowledge generation for societal transformation.			
ODeL Vision	Providing world class ODeL to expand higher education opportunities and support life-long learning.			
Goal	To be a Mak ODeL Centre in blended, distance, online and eLearning services and programmes.			
Core Values	Flexibility	Openness and diversity	Leaner centredness	Inclusivity
	Customer responsiveness	Collaboration	Innovation	
Teaching/learning method	Blended learning	Open, distance and eLearning	VR-based learning	AI powered learning

EduTech

4.1.4 The development model for the mid-to-long-term development plan

The mid-to-long-term development plan was developed using an evaluation model. An evaluation model is a framework that uses objective measurement and analysis methods to measure the process and results of a program. The reason for applying an evaluation model to the development of a mid-to-long-term development plan is to evaluate whether the planned mid-to-long-term development plan is successfully implemented.

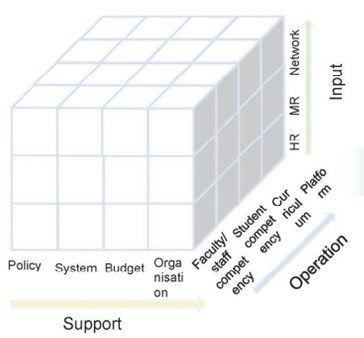
Generally, the logic model, CIPP (Context-Input-Process-Product), Kirkpatrick, and IPO (Input-Process-Output) are examples of evaluation models. There exist many other evaluation models that have been used in various ways according to the different program characteristics.

Table 4.2 below summarises the types and characteristics of the above evaluation models:

❊ **Table 4.2** Types and characteristics of evaluation models

Types	Characteristics
Logic model	The program's cause-and-effect path can be logically set up and evaluated, and the business operation process can be logically linked and applied to the flow of inputs, activities, outputs, and results.
Kirkpatrick	This model is an outcome-oriented model that evaluates the program's performance by dividing it into response, learning, action, and results.
CIPP	This model emphasizes evaluation at each process stage rather than the achievement of the goal. It is divided into evaluations of the situation, input, process, and output, and influences decisions regarding improvement.
IPO	This model consists of input, operation, output and performance, and is mainly used to evaluate the effectiveness of programs that are carried out with the budget of administrative organisations.

The logic model was used to develop this mid-to-long-term development plan. However, although there is no standardized logic model, the IPO, which consists of input-process-output-result, was also considered in the logic model. The reason is that the mid-to-long-term development plan requires budget investment, and the effectiveness evaluation must be considered later. Therefore, the input of the IPO model was subdivided into support and input (resource) types to configure the mid-to-long-term development plan elements. The modified logic model that considers the components of the IPO is in Figure 4.1.



Category	Logic model	ODeL mid-to-long-term development plan	
Input	Activities required to achieve the intended result	Support	Policy, System, Organisation, Budget
	Human and material resources	Input	Human Resources, Material Resources, Cooperation Network
Process	Services provided directly, etc.	Operation	Faculty/staff /student competency ODeL curriculum operation Platform development and operation
Outcomes	Benefits to beneficiaries or changes resulting from the program (outputs)	Result (Expected effect)	Specialized ODeL educational services considering Uganda's higher education environment

❊ **Figure 4.1** Modified logic model that considers the components of the IPO

4.2 Road-map and implementation Plan

4.2.1 Roadmap

The roadmap for mid-to-long-term development of ODeL in Uganda's higher education centred on Makerere University is as shown in Table 4.3:

※ Table 4.3 Roadmap for mid to long-term development of ODeL in Uganda's higher education

	Current (2025)	Short Term (~2030)	Mdieum Term (~2035)	Long Term (2035~)
OdeL Curriculum Operation	IODeL established Less than 20% courses having online presence	New ODeL unit in each college Eash college to have 50% courses with online presence	Expanding ODeL unit within each college Each college to have 100% courses with online presence	ODeL units in all college strengthend. Establishment of a cyber university in Uganda
Degree	ODeL, Few units (e.g. Publich Health) Less than 4 programees fully online	ODeL Masters Degree	ODeL Bachelor's Degree	ODeL Doctoral Degree
Education Methods	Blended and some courses online	OdeL Blended Learning and 50% online	OdeL Blended Learning and 100% online	OdeL Blended Learning and 100% online
Scope of Education Services	ODeL and some colleges	Makerere University 	Makerere Other Uganda Universities 	Africa and Beyond + Oversees 

4.2.2 Mid/Long term development Plan

To implement the mid-to-long-term development plan presented in the roadmap, key projects and activities are presented by dividing them into the categories of "support," "input," "operation," and "results."

The short-term plan is to establish a foundation for expanding ODeL by carrying out the KOICA project (2024-2028), and the goal is until 2030. The mid-term plan is to expand the ODeL provision within each College such that there are parallel graduate programmes running in the

online(distance) mode. In addition, the goal is to promote ODeL exchanges with other universities in Uganda until 2035.

The mid-to-long-term plan is to leverage Makerere University's ODeL capacity to support the Government in the establishment of the Open University of Uganda as is enshrined in the Education and Sports Sector Digital Agenda Strategy 2025-2030. Makerere University will also offer online bachelor's, master's, and doctoral degrees. Based on this, students from other African countries besides Uganda will be admitted and the foundation for attracting students from countries other than Africa will be established.

In addition, Mak will strengthen provision of ODeL education services to adult learners and higher education thereby providing lifelong education opportunities to adult learners.

The mid-to-long-term development plan for ODeL is as in Table 4.3

※ Table 4.4 Mid-to-long-term development plan for ODeL

Category	Sub-Category	Key Point	Activity	Promotion Period		
				Short-Term	Mid-Term	Long-Term
Support	A.1 System / Policy	A.1.1 Improvement and enactment of MAK regulations related to ODeL	A.1.1.1 Improvement of the ODeL operation regulations	√		
			A.1.1.2 Regulations on the establishment and operation of new ODeL departments		√	
			A.1.1.3 Improvement of regulations and procedures on ODeL quality assurance		√	
			A.1.1.4 System maintenance for improved ODeL facilities		√	
		A.1.2 Enactment of ODeL related laws	A.1.2.1 Enactment of laws related to ODeL at national level			√
	A.2 Organisation	A.2.1 Operation of "ODeL Management Committee (tentative name)"	A.2.1.1 Operation of "ODeL Programme Committees" by college	√		
			A.2.1.2 Organisation and operation of Mak "ODeL Management Committee"	√		
		A.2.2 Operation of ODeL dedicated organisation	A.2.2.1 Organisation and operation of "Mak ODeL Centre of Excellence within the IODeL"	√		
			A.2.2.2 Strengthening of research function and expansion of roles of IODeL		√	√
	A.3 Budget	A.3.1 Expansion and operating budget of ODeL	A.3.1.1 Securing operating budget for "Mak ODeL Centre of Excellence and IODeL"	√		
			A.3.2.1 Government budget support for mid-to-long-term development of ODeL in Uganda's higher education		√	√
Input	B.1 Human Resources	B.1.1 Securing ODeL Operational Personnel	B.1.1.1 Securing ODeL Support Personnel in each College/School/Institute	√		
			B.1.1.2 Securing "Mak ODeL Centre of Excellence" required personnel		√	√
			B.1.1.3 Securing staff for the IODeL establishment		√	√
			B.1.1.4 Securing ODeL dedicated faculty and online tutor		√	√
Input	B.2 Material Resources	B.2.1 Establishment of IT infrastructure	B.2.1.1 Securing hardware/software	√	√	√
			B.2.1.2 Establishment of ODeL platforms	√	√	√

	B.3 Cooperation Network	B.3.1 Organisation and operation of cooperation network	B.3.1.1 Cooperation committee with government agencies related to ODeL	√	√	√
			B.3.1.2 Cooperation committee with overseas development partners (WB, KOICA, etc.)	√	√	√
			B.3.1.3 ODeL coooperation committee with other universities		√	√
			B.3.1.4 Global cooperation network for attracting international students and funding		√	√
Operation	C.1 ODeL competency	C.1.1 Faculty competency	C.1.1.1 Definition of ODeL standard competencies		√	
			C.1.1.2 Development and operation of training programs		√	
			C.1.1.3 Development and operation of online tutor training programs		√	
		C.1.2 Staff competency	C.1.2.1 Define ODeL standard competencies by job		√	
			C.1.2.2 Development and operation of training programs by job		√	
		C.1.3 Student competency	C.1.3.1 ODeL literacy	√		
			C.1.3.2 Development of AI·Digital literacy education programs		√	
			C.1.3.3 Opening of AI·Digital literacy liberal arts courses		√	
			C.1.3.4 Operation of AI·Digital literacy qualification system			√
Operation	C.2 Curriculum	C.2.1 Operation of Blended Learning (B/L)	C.2.1.1 Operation of ODeL in existing departments based on “blended learning model”	√		
		C.2.2 Operation of ODeL (100% online)	C.2.2.1 Operation of 100% online selected programmes at graduate level		√	
			C.2.2.2 Operation of 100% online selected programmes at bachelors and graduate level			√
		C.2.3 Establishment of ODeL departmental programme committees	C.2.3.1 Establishment of ODeL programme committees undergraduate and graduate		√	
		C.2.4 Strengthening ODeL	C.2.4.1 Strengthening of ODeL units at colleges			√
	C.3 Platform	C.3.1 Teaching–Learning and Academic Management	C.3.1.1 Improvement of Mak eLearning Platform (MUELE)	√		
			C.3.1.2 Improvement of ACMIS (ACademic Management Information System)		√	

			C.3.1.3 Establishment of an enhanced online Learning Platform			√
			C.3.1.4 Establishment of an enhanced University ACMIS			√
			C.3.1.5 Establishment of an enhanced online Lifelong Education ODeL Platform			√
		C.3.2. Teaching-learning support	C.3.2.1 MAK education-related system linkage and integration		√	
			C.3.2.2 e-portfolio system construction		√	
			C.3.2.3 AI chatbot system construction		√	
			C.3.2.4 U-MOOC construction		√	
			C.3.2.5 Digital content archive system construction		√	
			C.3.2.6 e-assessment system construction			√
			C.3.2.7 Ugandan university resource united system construction			√
			C.3.2.8 Ugandan Research Information Sharing Service System construction			√
Result	D.1 Educational Services	D.1.1 Provision of ODeL Education Programs	D.1.1.1 Provision of ODeL Education Programs centred on MAK	√		
			D.1.1.2 Provision of ODeL Education Programs and Exchanges with Other Ugandan Universities		√	
			D.1.1.3 Provision of ODeL Education Programs with Universities in Other Countries and Attracting International Students			√
		D.1.2 ODeL Degree Operations	D.1.2.1 ODeL Bachelor's Degree		√	
			D.1.2.2 ODeL Master's Degree	√		
			D.1.2.3 ODeL Doctoral Degree			√
		D.1.3 Students	D.1.3.1 Ugandan University Students	√	√	
			D.1.3.2 Students from Other Countries (International Students)			√
			D.1.3.3 Ugandan Adult Learners (Lifelong/Vocational Training)			√
	D.2 School Finance	D.2.1 Securing Finance	D.2.1.1 Securing Stable Finance		√	√

4.2.3 Details by category

※ Table 4.5 Detailed by Category: Support

Category	Sub-Category	Key Point	Activity	Promotion Period		
				Short-Term	Mid-Term	Long-Term
Support	A.1 System / Policy	A.1.1 Improvement and enactment of MAK regulations related to ODeL	A.1.1.1 Improvement of the ODeL operation regulations	√		
			A.1.1.2 Regulations on the establishment and operation of ODeL programme committees		√	
			A.1.1.3 Improvement of regulations and procedures on ODeL quality assurance		√	
			A.1.1.4 Maintenance of ODeL systems within colleges		√	
		A.1.2 Enactment of ODeL related laws	A.1.2.1 Initiate proposals for laws related to ODeL at national level			√

During the KOICA project period, Makerere University's regulations for ODeL operation will be reviewed. As a mid-term plan, Mak's system for opening an ODeL unit in each college will be established.

It is necessary to improve the regulations and procedures for ODeL quality management. The quality assurance teaching and learning within Mak is currently done by the Quality Assurance Directorate (DQA). But it is also necessary to consider designating a new unit in charge of quality assurance for ODeL. As a long-term plan, through the capacity built, Makerere University shall support the Government in establishing the National Open University of Uganda as enshrined in the Education and Sports Sector Digital Agenda Strategy 2025-2030. Meanwhile, Makerere University shall continue focusing on providing Blended and Distance (Online) Learning programmes

4.2.4 Related Laws/Regulations

In order to operate and expand ODeL in other universities in Uganda, a national-level ODeL-related law needs to be enacted. Through the law, the legal status of ODeL operation and national budget support can be specified. It can also secure credibility when conducting educational cooperation with foreign countries.

In order to enact that national-level ODeL law, there are two ways: either through cooperation with the Ministry of Education to revise Uganda's higher education-related laws, or to enact a new law for ODeL. The most efficient method will be determined through consultation with the relevant ministries. Uganda can in future plan to have a fully-fledged cyber university like the ones in Korea.

Table 4.5 illustrates the Korean laws and regulations that govern the establishment of Cyber Colleges and the framework for promotion of digital-based distance education.

※ **Table 4.6** Korean laws and regulations for establishment of a cyber college

Category	Law/Regulation
ODeL in the 'Basic Education Law'	• Article 23 of the 'Basic Education Law', etc.
ODeL regulations under laws related to education	• Article 22, etc. of the Higher Education Act and Enforcement Decree (Article 14-2)
ODeL related laws/regulations	• Framework Act on the promotion of digital-based distance education. • Revision of Instructions on the operation of distance learning courses at universities, etc. • Cyber University Academic Affairs Guide • Notice on Distance Education Facilities Standards • Cyber University Establishment and Operation Regulations • Credit Recognition Standards for Distance Education

Copyright, portrait rights, and personal information protection law s related to ODeL	• Article 25 of the 「Copyright Law」, etc. • Guidelines for the Use of Copyrighted Works for University Classes」, etc. • Portrait Rights and Article 22, Paragraph 6, Article 39-3, Paragraph 4 of Personal Information Protection Law, etc.
Laws related to protection of ODeL activities	• Article 15 of the Special Law on the Improvement of Teachers' Status and Protection of Educational Activities
Complementary ODeL Law	• Basic Law on Intelligent Information • Law on Promotion of eLearning Industry Development and Utilization of eLearning • Law on Promotion of National Knowledge Information Linkage and Utilization
Korea National Open Univ.	• Act on the Establishment and Operation of KNOU

Standards for establishing cyber universities in Korea

The regulations on the establishment and operation of cyber universities in Korea are provided by **Presidential decree**. The standard for facilities for the operation of cyber universities are provided in Table 4.6.

Facilities	<Basic facilities> University Headquarters and Administration Office, Professor's Research Office, Lecture Room, PC Lab, Seminar Room, Content Development Room <Support facilities> Server & Network Equipment Management Office, Platform System Operation Office, Digital Library <Facility Standard Area by Number of Students> Less than 1,000: 990 ㎡, 1,000 or more ~ Less than 2,000: 1,485㎡ 2,000 or more ~ Less than 3,000: 1,980㎡ 3,000 or more: 2,475㎡		
Faculty	Cyber universities' faculty members are in principle affiliated with departments, etc., and each department, etc. must secure at least one faculty member for each major. In this case, the total number of faculty members to be secured must be the quotient obtained by dividing the number of students by 200 [the decimal point is rounded up].		
Graduate school	general graduate school/specialized graduate school	<Master's Program Department> Securing 3 or more faculty members in related fields	<Doctoral Program Department> Securing 5 or more faculty members in related fields Ratio of faculty members to lectures of 60% or more based on total credits
	special graduate school	<Master's Program Department> Securing 3 or more faculty members in related fields	-

❊ **Figure 4.2** Standards for Operating a Cyber University in Korea

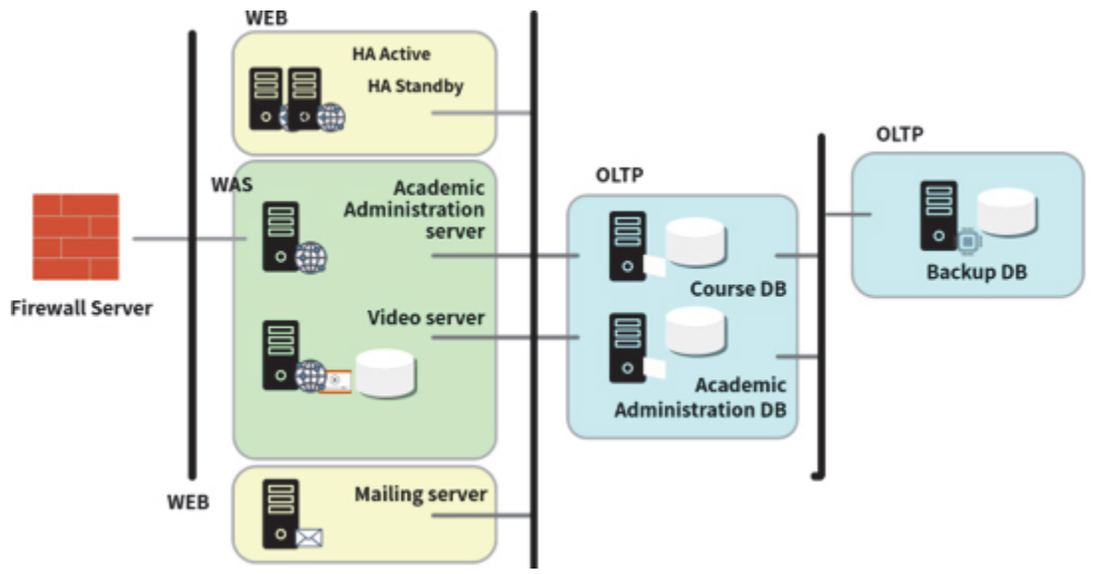
Dedicated facilities for distance education must be established. However, Internet and server facilities for university administrative work must not be included in the facilities for distance education. The minimum distance education facilities that cyber universities must have for distance education and academic management are as follows:

❊ **Table 4.7** Minimum distance education facilities that cyber universities must have

Category		Basic Facility Capacity (less than 1,000 Users)			Additional Facility Capacity (Per 1,000 Users)		
		CPU	Memory (MB)	HDD (GB)	CPU	Memory (MB)	HDD (GB)
OLTP Server [tpmC]	Academic administration DB	52,000	6,144	3,300	52,000	3,072	3,100
	Course DB						
	Backup DB						
Web/Was Server [OPS]	Web Server	8,700	12,288	1,650	8,700	4,096	1,125
	Mailing Server						
	Video Server						
	Academic administration server.						

Take note of the following regarding Table 4.6 above:

- ☑ CPU capacity is presented as tpmC of TPC-C for OLTP server and OPS of spec jbb2005 for Web/Was server.
- ☑ Server and network capacity are based on the actual number of students taking the course.
- ☑ Basic facility capacity is applied for students enrolled under 1,000, and for students over 1,000, the number of students is added by rounding up to 1,000. For example, if the number of students is 1,000 or more but less than 2,000, it is calculated as 2,000.
- ☑ The Web server that students' access is configured to be clustered with two or more servers to enable server load distribution (SLB)
- ☑ The server and network are configured with reference to the "Cyber University Information System Reference Model" (Figure 4.4), a standard reference model of 3-Tier shown in the figure below:



❊ **Figure 4.3** Cyber University Information System Reference Model

The distance education operation S/W and network equipment standards are illustrated in Figure 4.5 below:

Category		Standard
S/W	Web Server (Web Engine)	Web/ Was system SW
	Video Server	Streaming service that supports bandwidth of 300Kbps or more
	DBMS	Support for data partition processing capability and scalability Support for data integrity rules and reliability assurance Support for multimedia (video, image, etc.) file processing
	Operation S/W	Learning Management System Learning Content Management System Content Development Management System

Category	Basic facility capacity (less than 1,000 users)	Additional facility capacity (per 1,000 users)
Internet Bandwidth	74 Mbps	74 Mbps

Sub-Category	Key project	Activity	Promotion period		
			Short-term	Mid-term	Long-term
A.2 Organisation	A.2.1 Operation of "ODeL Management Committee (tentative name)"	A.2.1.1 Operation of "ODeL Programme Committees" by college	√		
		A.2.1.2 Organisation and operation of MAK "ODeL Management Committee"	√		
	A.2.2 Operation of ODeL dedicated organisation	A.2.2.1 Organisation and operation of "MAK ODeL Centre (tentative name)" under the university	√		
		A.2.2.2 Strengthening of research function and expansion of role of "MAK ODeL Centre"		√	√

❊ **Figure 4.4** Distance education operation S/W and network equipment standards

Implementation Strategy

According to the "Implementation strategy for the policy on ODeL (2015)", "ODeL Programme Committees" are organized and operated by each college.

A university level ODeL committee shall be established as a Senate Committee with the responsibility to provide academic oversight for ODeL in the entire University. It shall have representation from across all Colleges, Institutes and Schools.

In order to operate stably, the "ODeL Management Committee" needs to specify the committee members and operation in the school regulations such as school rules. The ODeL Management Committee members comprise ODeL stakeholders such as professors, staff, and students, and the composition ratio is determined through discussion.

Related Laws and Regulations

a) Basic Law on Activation of Digital-based Distance Education

Article 6 (University, etc. Distance Education Management Committee)

(1) The Distance Education Management Committee (hereinafter referred to as the "Distance Education Management Committee") pursuant to Article 14 Paragraph 1 of the Act shall deliberate on the following matters. However, the Distance Education Management Committee established in a university pursuant to Article 2 Paragraph 5 of the Higher Education Act shall respond to the advice of the university president on the following matters:

- ☑ Operation plan for distance education, including timing and method
- ☑ Selection of subjects eligible for distance education
- ☑ Support and management for improving the quality of distance education
- ☑ Other matters necessary for the smooth operation and management of distance education

(2) The Distance Education Management Committee shall comprise at least 7 members, including one chairperson.

(3) The members of the Distance Education Management Committee shall be appointed or commissioned by the university president from among faculty, staff, students, and experts with extensive knowledge and experience in education. In this case, student members shall account for at least 3/10 of the total members.

b) KNOU's "Distance Education Management Committee" school regulations

(1) The Distance Education Operation Committee advises on the following matters:

- ☑ Operation plan including timing and method of distance education
- ☑ Selection of subjects eligible for distance education
- ☑ Support and management for improving the quality of distance education

☑ Other important matters for the smooth operation and management of distance education

(2) The committee shall comprise at least 7 members, including one chairperson.

(3) The committee members shall be appointed and commissioned by the president from among faculty, staff, students, and experts with extensive knowledge and experience in education. Student members shall account for at least 3/10 of the total members in this case.

(4) The term of office of appointed members shall be 2 years but may be extended. However, the term of office of student members shall be 1 year.

Lessons for Uganda from the Cyber College model of Korea

As a proposal for success, the ODeL unit at Makerere University must present an annual report that includes ODeL operation results based on statistical data (number of ODeL courses, students, etc.) and report to the Mak Council.

The Mak ODeL Centre in ODeL shall be established at the new ODeL building at Makerere University and the IODeL will be strengthened as a central service unit to support ODeL in all units of the university.

Through this "Mak ODeL Centre", Makerere University can be positioned as an institution that provides transformative and innovative teaching, learning, research, and services responsive to dynamic national and global needs.

As a mid-to-long-term plan, the research and planning function of IODeL will be expanded and, in order to ensure the professionalism and stable operation of the centre, the necessary human resources will be continuously recruited and operated by hiring permanent staff rather than contract staff.

The "Mak ODeL Centre" will be enabled to perform not only production and delivery but also quality assurance and copyright management of digital educational materials (e.g., video) required for ODeL

The "Mak ODeL Centre" will be operated by securing a budget within the university. The activities as shown in the extract below:

Sub-Category	Key project	Activity	Promotion period		
			Short-term	Mid-term	Long-term
A.3 Budget	A.3.1 Expansion and operating budget of ODeL	A.3.1.1 Securing operating budget for "MAK ODeL Centre"	√		
		A.3.2.1 Government budget support for mid-to-long-term development of ODeL in Uganda's higher education		√	√

※ **Figure 4.5** Expansion and Operating Budget of ODeL

To secure the necessary budget for successfully operating ODeL and expanding ODeL in Uganda, it is imperative to enact a national-level ODeL-related law. This systemic change will pave the way for ODeL expansion in the country. To secure a stable budget will enable the stable implementation of the projects presented in the "ODeL Mid-to- Long-term Development Plan." This will secure the necessary budget to support ODeL not only for Mak but also for all Ugandan national universities, and "Mak ODeL Centre" will be able to expand its role as an ODeL support institution for Ugandan higher education.

As a short-term plan, it is recommended to expand the operation of the "eLearning Coordinators/Champions" for each college currently operated by Mak and promote awareness of ODeL and ODeL expansion through support of "Mak ODeL Centre." As a mid-to-long-term plan, it is recommended to hire permanent staff and continuously hire the staff needed for ODeL as the functions of "Mak ODeL" expand. In addition, it is recommended to hire faculties dedicated to ODeL and operate the ODeL department in accordance with the establishment of ODeL units in each college.

It is recommended to hire online tutors to support ODeL department classes and assist faculties in operating online subjects. Unlike the case of cyber universities in Korea (specifically KNOU) where undergraduates have one tutor per 200 students, it is recommended that one tutor be assigned to 100 students (undergraduate) for Makerere University. However, graduate schools have one tutor per subject.

Manpower for developing educational content at KNOU

The KNOU is developing educational video content for undergraduate and graduate school lectures at DMC (Digital Media Centre). About 160 subjects per semester, about 320 subjects per year, and about 4,160 educational video contents are produced annually. For this purpose, there are 10 studios in total, including 8 web studios and 2 TV studios, and about 90 (full-time) media production technical staff and administrative staff. A detailed job description is shown in the table below:

❊ **Table 4.8** Manpower for Developing Educational Video Contents at the KNOU

Category	Role	Detailed job description	No. of people required (minimum)
Instructional design	Instructional design	• Planning, analyzing, designing, etc. of lecture content production	3
Design	Web/Graphic Design	• Graphic design/web planning and development, lecture content design, CG production	3
Media Development	Recording/editing video content	• Lecture content video planning and production, CG production	2
Programming	Programming	• Computer Programming Related to Lecture Content	1
Content Management	Content Management	• Responsible for managing, testing, LMS porting, and operating lecture content	1

Online tutor job description at KNOU

- ☑ Tutoring target: freshmen, transfer students (the first semester)
- ☑ Online tutoring method
  - Guidance of students using tutoring website
  - Tutoring using SNS, MMS
  - Online/offline lectures required by the department
- ☑ Guidance of academic schedule: Work to help students smoothly take classes such as course registration, registration, and assignments.
- ☑ Guidance of learning method: Guidance of ODeL methods such as PC and smartphone.
- ☑ Guidance of learning content: Provision of learning-related materials and Q&A. Conduct online (video) lectures when necessary.
- ☑ Student management: Encourage participation of those who do not participate in learning and tutoring (using SNS, e- mail, MMS).
- ☑ Student counseling: Counseling on learning and academic dropout, learning maladjustment, academic and career path.
- ☑ Guidance of learning assignments.
- ☑ Qualification requirements for tutors: Master's degree or higher in a related major

4.3 ODeL and Makerere University

By 2028, the hardware and software required for the improvement and system operation of the Makerere University eLearning Environment(MUELE) will be enhanced through this Masterplan. Based on this, the hardware and software required for the expansion and operation of ODeL must be continuously secured, and for this, support from the Ugandan government is essential. In order to secure a budget for the continuous construction of IT infrastructure, a committee for consultation with the "Distance Education Management Committee" and related ministries is necessary.

In addition, the platform requires planning and construction of other tools necessary for implementation of ODeL. Such tools may include an e-portfolio system for managing students' learning careers, an e-assessment system for online examinations, etc.

The IODeL will execute and implement mid- to long-term plans for the future expansion and development of ODeL. (See Chapter 5 for the "Mid/Long-term Development Plan for IT Infrastructure"). In order to expand and improve the quality of ODeL in Uganda's higher education, a collaborative committee consisting of relevant ministries such as the Uganda Ministry of Education and Sports (MoES), the Uganda Ministry of Finance, Planning and Economic Development (MoFPED), the Ministry of ICT and National Guidance (MoICTNG), and relevant councils such as the National Council for Higher Education (NCHE) should be continuously operated.

Through this, national policy-making and budget support for ODeL in Uganda's higher education should be carried out, and IT infrastructure support at the national level should be supported. In order to promote the projects presented in "the Masterplan of Mak ODeL", a cooperative system with overseas development partners such as the KOICA, the African Development Bank and the World Bank is important. It is necessary to organize a committee for cooperation with these organisations and secure the budget necessary for promoting ODeL projects through regular meetings.

It is possible to promote efficient ODeL projects by sharing "the Masterplan of Mak ODeL" with overseas development partners and preventing overlapping projects by dividing roles with them. In order to expand ODeL to other universities in Uganda, it is necessary to organize a committee for ODeL exchange with Ugandan universities. It is necessary to discuss how to expand ODeL to other universities centred on Mak, and Mak should play a role in supporting the introduction and expansion of ODeL to other universities. The ODeL cooperation committee with other universities can be composed of a decision-making body composed of vice-chancellors and a working committee composed of executives.

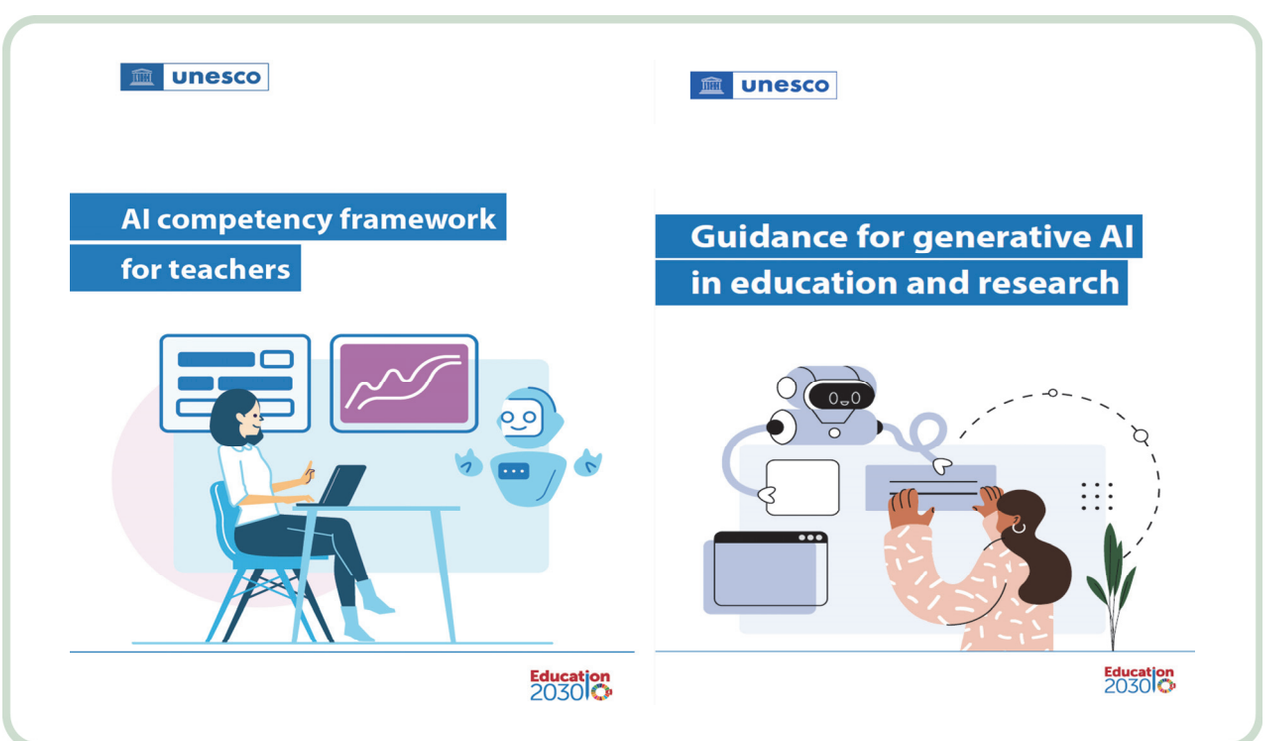
The "Global Cooperation Network" can consider two roles. One role is to attract international students from African countries and other regional countries who want to enroll in MAK online, and the other role is to cooperate in education through ODeL, such as joint degrees and credit exchanges with universities in other countries.

Members of the "Global Cooperation Network" can be composed of ministries, educational institutions, and universities related to ODeL in other countries.

4.3.1 Strengthening faculty competency

There will be a definition of ODeL-related standard competency required for faculty and use it when developing and operating training programs at Mak in the future. In addition, along with the definition of ODeL-related competency, AI·Digital literacy is also included to enhance the faculty's ability to utilize Edtech. The content on AI and digital literacy will be organized by referring to documents presented by the United Nations Education Science and Cultural Organisation (UNESCO) and related to AI·digital literacy.

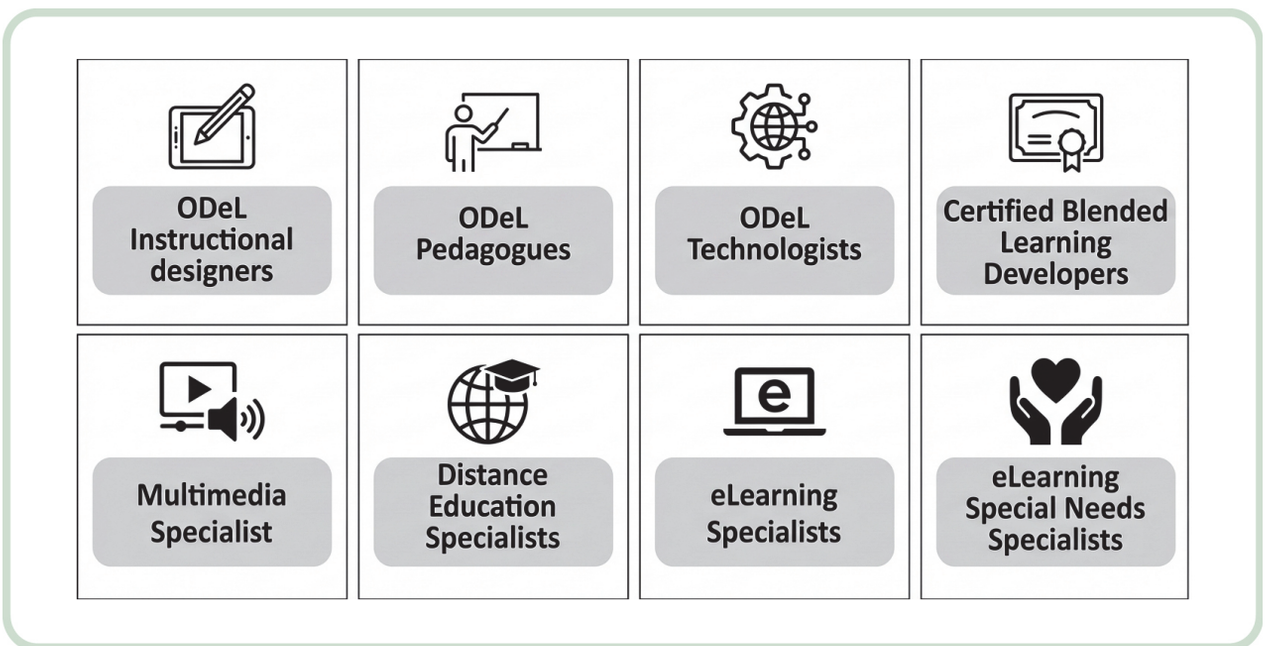
The "Mak ODeL Centre" handles the development of standard competency and training programs, which are operated by the "eLearning Coordinators/Champions" of each college as an instructor. To operate training effectively in the future, it is necessary to consider operating training programs by distinguishing between new professors, working professors, and professors by major. In addition, a plan to actively introduce ODeL in existing departments and provide incentives to professors with high competency must be prepared. It is necessary to develop an online tutor training program to prepare for the operation of online tutors who will help faculty in online courses and help with course management. Tutors can use the Competency framework for lecturers and guidance for generative AI which is shown in the figure below:



※ Figure 4.6 Competency framework for lecturers and guidance for generative AI

There will be provision of ODeL-related training programs and include AI·Digital literacy to enhance the ability to utilize EduTech. ODeL competency for staff is developed and operated by training programs for each job. To this end, Mak must support facilities, and SW is required for training. For example, a stable budget for Adobe SW licenses required for video content production must be provided.

The IODeL will be in charge of developing ODeL competency and training programs for staff and operating training for new and current staff. To strengthen staff competency, it is necessary to establish a system that can support them (e.g., scholarship support) at the Makerere University level so that they can obtain ODeL-related degrees in addition to training programs. Table 4.8 below shows staff of IODeL:



❊ **Figure 4.7** Staff of IODeL

One of the essential competencies that students need in the information society is AI·digital literacy, and countries worldwide are working to strengthen students' AI·digital literacy. For ODeL, students must have AI·digital literacy.

The IODeL will be in charge of basic education on students' use of ODeL and development of AI·digital literacy programs, textbooks, and the "eLearning Coordinators/Champions" for each college will be in charge of operating the education program. An online course on AI·digital literacy can be opened in which all students can take the course as a mandatory course.

As a long-term plan, Mak will operate a university-level AI·digital literacy qualification system as proof that Mak graduates have AI·digital literacy. In developing AI·digital literacy qualification system, Mak could benchmark from the institutions such as KNOU, UNESCO and others:

4.4 Curriculum Development for ODeL

The ODeL curriculum development activities are presented in the Figure 4.10:

Sub-Category	Key project	Activity	Promotion period		
			Short-term	Mid-term	Long-term
C.2 Curriculum	C.2.1 Operation of Blended Learning (B/L)	C.2.1.1 Operation of ODeL in existing departments based on "e-content"	√		
	C.2.2 Operation of ODeL (100% online)	C.2.2.1 Operation of 100% online courses based on educational video content		√	
		C.2.2.2 Operation of online courses in existing departments (two-track operation)		√	
	C.2.3 Establishment of new ODeL departments (100% online)	C.2.3.1 Establishment of new ODeL departments (bachelor's degree)		√	
		C.2.3.2 Establishment of ODeL graduate school (master's/doctoral degree)	√		√
	C.2.4 Establishment of Cyber college	C.2.4.1 Establishment of ODeL colleges			√

※ **Figure 4.8** Curriculum development for ODeL

Currently, Mak is developing "e-content" using a "Detailed Design Document (DDD)". With this DDD, each college will expand ODeL operation by utilizing the developed "e-content". Through this KOICA project, educational video content that can be utilized in each subject will be developed through a studio for developing educational video content, and utilization of the developed educational video content in ODeL operation will expand. Rather than providing reference materials only, educational video content will be provided by recording lectures by professors and other facilitators, so that students can take classes that are the same as face-to-face classes by utilizing educational video content.

In addition, since the current development of online courses requires a lot of time and effort for professors, a method to reduce the time and effort of professors is needed. It is expected that improving the instructional design process will increase the participation rate of professors in ODeL and rapidly spread ODeL within Mak. To improve instructional design, refer to other ODeL education services (e.g., Coursera, etc.) including KNOU. Makerere University can consider operating 100% blended ODeL courses based on educational video content and other mixed-media content, and operating courses by distinguishing between face-to-face and online courses in existing departments. The two-track operation method can consider distinguishing between face-to-face and online courses when recruiting students, and allowing students to choose between face-to-face and online courses when applying for courses.

100% online ODeL has the disadvantage of lacking interaction with students compared to face-to-face education. To overcome this disadvantage, learning platforms can enable interaction with students and active learning, and various methods such as face-to-face seminars and classes can be considered. It is necessary to establish a cooperative system so that seminars/workshops/practical classes can be conducted through cooperation with other

universities in each region for offline meetings with students. As a mid-term plan, a department that operates ODeL will be expanded to operate undergraduate courses and established to operate master's and doctoral degrees. The new unit will be established in fields with high social demand for human resources (e.g. IT-related departments), and demand surveys such as Ugandan industry analysis will be necessary for this.

As a long-term plan for Uganda, a cyber university/college should be established as a 100% online university/college. To this end, related laws and systems must be established and IT infrastructure for operating a cyber university/college must be built. In addition, it will be necessary to form a separate organisation for operating the cyber university/college. The new organisation will have facilities for producing educational video content and specific staff will be hired for this purpose.

In addition, the new cyber university/college will develop and operate ODeL courses for adult learners, such as vocational training, in addition to degree courses, and provide online lifelong education services by operating microdegrees, etc.

4.5 DDD of KNOU

Lecture abstract	
Faculty introduction	
Lecture contents	Unit 1
	Learning outline
	Learning goal
	Key words
	Learn (Lecture Video)
	Questions (or quiz)
	Summary

에듀테크콘텐츠크리에이팅

1강. 에듀테크콘텐츠

학습종료

강의개요

본 강의는 에듀테크 콘텐츠에 대한 기본적인 사항을 살펴봅니다. 교육용 디지털 콘텐츠는 교수자가 의도한 학습 내용을 전달하고 학습자는 이를 통해 목적하고자 한 학습을 할 수 있는 매개체입니다. 여기서는 교육용 디지털 콘텐츠에 대한 개요, 발전과정 그리고 다양한 콘텐츠 형태에 대해서 학습합니다.

학습목표

1. 교육용 디지털 콘텐츠에 대해 설명할 수 있다.
2. 교육용 디지털 콘텐츠의 발전 과정을 설명할 수 있다.
3. 교육용 디지털 형태에 대해 설명할 수 있다.

주요용어

- SME(Subject Matter Expert): 교육용 콘텐츠 개발을 위해 학습 내용을 제공하는 전문가
- 코스웨어(courseware): 교육과정과 소프트웨어의 합성어로 교육과정에 기반으로 개발되는 이러닝 콘텐츠

학습하기

※ 학습목차로 이동하는 경우 네트워크의 속도에 따라 지연 시간이 발생될 수 있습니다.

생각해보기

최근 Chat GTP와 같이 생성형 AI 기술이 발전 및 확대되고 있다. 교과서와 같은 교재를 정해진 틀과 내용으로 만들어서 보급하는 것이 아니라 학생의 흥미와 관심에 따라 만들어 주는 "생성형 디지털 교재"가 가능하다면 장점과 단점이 무엇일지 생각해봅시다.

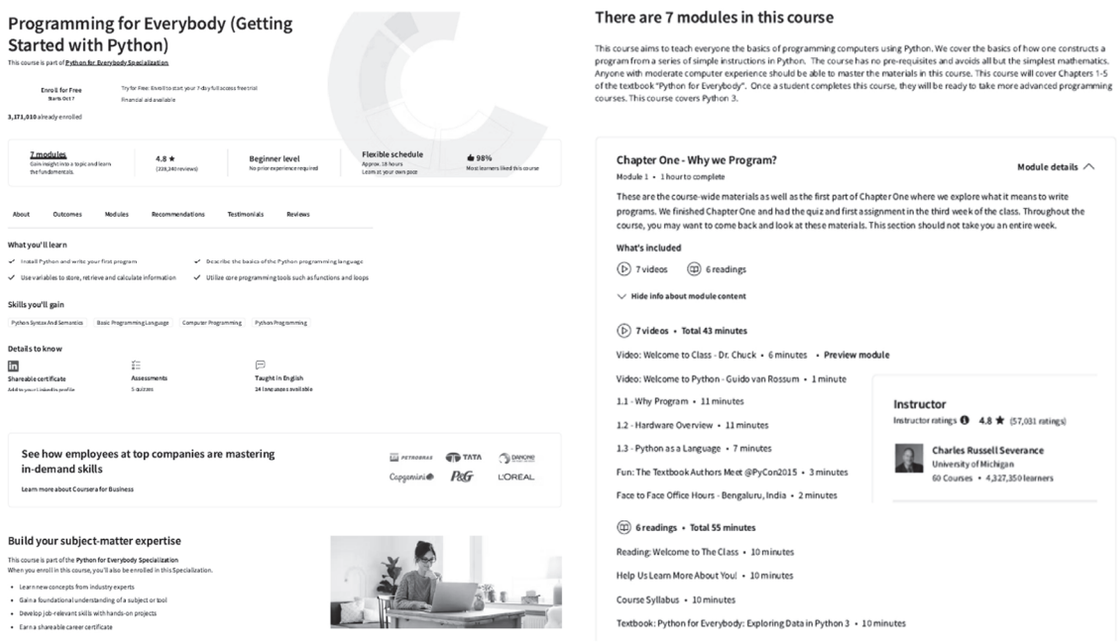
정리하기

1. 교육용 디지털 콘텐츠는 교육, 학습, 훈련의 목적으로 활용되는 디지털화된 문자나 그림, 음성, 동영상 등 디지털 콘텐츠를 말한다.
2. 에듀테크 기반 디지털 콘텐츠는 AR/VR 등 최신 에듀테크를 적용한 교육용 콘텐츠를 말한다.
3. 코스웨어는 교과과정과 소프트웨어의 합성어이며 개발된 과정에 따라 교육을 목적으로 개발되는 콘텐츠로 강의형, 토론형 등 다양한 교수-학습 전략을 기반으로 개발된다.
4. 최근에는 코스웨어 콘텐츠와 더불어 모바일 기기용 APP., 시뮬레이션, AR/VR 콘텐츠 등 다양해지고 있다. 특히 YouTube 등 1인 미디어 플랫폼의 대중화로 영상 기반의 콘텐츠 제작이 이루어지고 있다.
5. 웹캠, 액션캠, 마이크 등 강의 제작용 기기의 대중화, 사용하기 쉬운 촬영/편집 Open Source & Free SW의 보급은 교수자 1인 콘텐츠 개발은 물론 교육서비스까지 가능해졌다.

※ Figure 4.9 Online Course Structure at KNOU

4.6 Online Course Structure of Coursera

Course title	
What you'll learn	
Outcomes	
Chapter	Module 1
	Video lectures
	Readings
Instructor	



✳ **Figure 4.10** Online Course Structure at COURSERA

4.7 Teaching-Learning and Academic Management

4.7.1 Learning and Academic Management

❊ Table 4.11 Key project components and sub categories

Sub-Category	Key project	Activity	Promotion period		
			Short-term	Mid-term	Long-term
C.3 Platform	C.3.1 Teaching-Learning and Academic Management	C.3.1.1 Improvement of MAK eLearning Platform (MUELE)	√		
		C.3.1.2 Improvement of ACMIS (Academic Management Information System)		√	
		C.3.1.3 Establishment of Cyber University Learning Platform			√
		C.3.1.4 Establishment of Cyber University ACMIS			√
		C.3.1.5 Establishment of Lifelong Education ODeL Platform			√

Sub-Category	Key project	Activity	Promotion period		
			Short-term	Mid-term	Long-term
C.3 Platform	C.3.2. Teaching-learning support	C.3.2.1 MAK education-related system linkage and integration		√	
		C.3.2.2 e-portfolio system construction		√	
		C.3.2.3 AI chatbot system construction		√	
		C.3.2.4 U-MOOC construction		√	
		C.3.2.5 Digital content archive system construction		√	
		C.3.2.6 E-assessment system construction			√
		C.3.2.7 Ugandan university resource united system construction			√
		C.3.2.8 Ugandan Information Sharing Service System construction			√

4.7.2 Teaching Learning and Academic Management

The platforms required for “teaching-learning and academic management” are the LMS and ACMIS. The “Mak e- Learning Platform (MUELE)” currently used by Mak needs to be improved through this KOICA project. As a mid-term plan after the end of the KOICA project, it is necessary to derive improvements according to the expansion of ODeL operation and improve ACMIS. In addition, data sharing and utilization with MUELE are required to link the two systems.

An independent learning management system and ACMIS are also required when operating lifelong education for adult learners. Since lifelong education courses are operated as microcredentials and certification courses rather than degrees, the system should be established according to its characteristics. In the case of the KNOU, the lifelong education course system, undergraduate course system, and graduate course system are operated independently.

4.7.3 Teaching-learning support

The "Teaching-Learning Support" platform is a system that can support research, classes, and administration at the university. The type of teaching-learning support platform can vary depending on the direction and type of Mak's ODeL education service. The "Teaching-Learning Support" platform presents a platform that can be considered under the assumption that Mak will play a role as a central university for ODeL in Africa as well as Uganda's ODeL. As a mid-term plan, after the successful completion of this project, an integration and linkage plan for the education and administration-related systems currently being operated at Mak is needed along with the improved MUELE. Based on this, system improvement is needed for linkage between systems for efficient education and administration (e.g. SSO, Single Sign-On).

The following systems can be considered as mid-to-long-term plans for teaching-learning support:

❊ **Table 4.9** Mid-to-long-term plans for teaching-learning support

Chatbox system	• A chatbot is software based on artificial intelligence (AI) that simulates conversations with users through text or voice interactions. • Chatbots can assist students with common queries about course schedules, admission requirements, registration processes, campus services, or IT support. This reduces the workload on administrative staff while providing 24/7 support to students. • Example: A student may ask, "How do I register for classes?" or "What are the office hours for the academic advisor?" The chatbot can provide instant, accurate answers.
e-portfolio	• An e-portfolio is a digital tool that allows individuals, such as students or professionals, to record and systematically manage their learning, experiences, and achievements. It enables users to store and share various types of content, such as learning materials, projects, certificates, reports, reflective essays, videos, and photos. • Unlike traditional paper-based portfolios, e-portfolios are online platforms, offering the advantage of accessibility from anywhere and allowing for regular updates. • University graduates can use e-portfolios to present their academic achievements and experiences to potential employers. e-Portfolios provide more comprehensive information than a traditional resume, making it a powerful tool to showcase professional skills. • The inclusion of multimedia elements can be particularly beneficial in creative industries. • e-Portfolios can foster collaboration among educators by sharing best practices and offering feedback on learning activities, creating a community of practice. • Professors can use e-portfolios to track students' learning paths and provide personalized support where needed. • Students can continue using e-portfolios after graduation as part of their

	lifelong learning journey. It becomes a tool for career development, credential verification, and tracking ongoing learning achievements 〈Related system example〉 Mahara: This open-source e-portfolio system provides users with a platform to record and share learning materials.
UMOOC	• A MOOC (Massive Open Online Course) is an online learning platform designed to offer free or low-cost courses to a large number of participants globally. • Courses are typically asynchronous, meaning students can engage with the material on their own time, though some MOOCs may also include real-time elements such as discussions or live sessions. • Universities can encourage their students to enroll in MOOCs to supplement traditional learning. For instance, if a student is interested in a subject not offered by their university, they can take a MOOC to gain that additional knowledge. • Students can also use MOOCs to review and strengthen their understanding of complex topics by revisiting foundational courses. • MOOCs present a unique opportunity for universities to enhance traditional education, promote lifelong learning, and provide accessible, flexible learning options to a global audience. By incorporating MOOCs into their academic programs, universities can support both students and faculty in developing new skills and exploring diverse areas of knowledge. • 〈Related system example〉 K-MOOC(Korea), utureLearn(UK), Coursera/edX/Udacity/KhanAcademy(USA)
Digital content archive system	• A Digital Content Archive System is a specialized platform designed to store, manage, preserve, and provide access to digital content. This system is a repository for various digital assets, such as documents, images, audio, video, and other multimedia files. The primary goal of such a system is to ensure that digital content is systematically organized and can be retrieved, preserved, and accessed over the long term. • A digital content archive system needs Metadata Management, which is the use of metadata (descriptive data about the content) to enhance the searchability and organisation of archived content (See. Appendix 1) • Faculty members can archive course materials such as syllabi, lecture notes, assignments, and recorded lectures in a digital archive system. This provides a centralized location where students can access past and present course content, even after a course has ended. • A digital archive can store video lectures from a professor, making them accessible to students across multiple semesters or even to a global audience. • This system allows universities to digitize books, manuscripts, historical documents, etc., store them in an archive, and make them available in a digital library format for students, faculty, and the public to use for research and learning.
E-assessment system	• In principle, authentic assessment strategies should be considered. • An e-assessment system is a digital platform designed to evaluate students' learning outcomes through various types of assessments such as tests, quizzes,

	assignment submissions, and surveys. This system streamlines the process of grading and providing feedback to students and allows both professors and students to interact with the evaluation process more efficiently. Unlike traditional offline assessments, online systems offer flexibility, allowing assessments to be taken anytime and anywhere, with many elements being automated for increased efficiency. • The system can provide personalized assessments tailored to individual student needs. Professors can set up customized tests for students based on their skill level or learning pace, improving their learning experience and outcomes. • With instant grading and feedback, students can track their own learning progress. The system allows them to identify areas of weakness and adjust their study plans accordingly, fostering more self-directed learning. • This is a system necessary for evaluating students who take classes from a distance, such as international students, in the future. • However, measures to prevent cheating on exams should also be considered
Research Information Sharing Service System	• The Research Information Sharing Service System (RISS) is a platform that provides access to a vast array of domestic and international scholarly materials, including research papers, dissertations, academic journals, and other academic publications. • The system aims to improve research efficiency by allowing researchers to access and share information relevant to their academic work easily. • University researchers and students can use RISS to easily search for and download domestic and international research papers, dissertations, and academic journals. This is particularly helpful for graduate students preparing theses or researchers working on extensive projects, as it provides access to a broad range of resources. • RISS enhances access to global academic resources, including international journals and conference materials. This enables university researchers to stay informed about the latest global trends and integrate these insights into their own research, particularly for comparative studies or international research collaborations. • RISS is a powerful tool in supporting university research by offering access to a vast array of academic resources and fostering information sharing and collaboration. It enhances researchers' ability to efficiently find and utilize scholarly materials, share their own work, and engage in collaborative research efforts. RISS can play a crucial role in elevating the quality of research and strengthening academic networks both within and beyond universities.
Ugandan university resource united system	• A university resource united system integrates and manages university resources, administrative functions, etc., on a single platform and helps the university use its resources efficiently. • The university administrative procedures can be handled in an integrated system, which greatly improves faculty and staff work efficiency. In addition, administrative services can be used without time and location restrictions. • The university resource united system collects and analyzes data to provide

	insights needed for decision-making and operational improvements at the university. This enables appropriate allocation and efficient management of resources and supports data-driven decision-making. • In Korea, KORUS has been in operation since 2017 to improve the efficiency and transparency of university financial management through efficient linkage and integrated management of complex and diverse accounting of national universities

4.8 Research Information Management System in Korea

4.8.1 Research Information Sharing Service (RISS)

Launched in May 1998, the Research Information Sharing Service (RISS) is the largest integrated academic research information platform in Korea that provides theses and academic papers, research reports, and open university lectures to universities (graduate) students, professors, and the general public

It aims to promote digital transformation in the academic research field and improve national research competitiveness by establishing and opening high-quality academic information in cooperation with universities and professional institutions nationwide

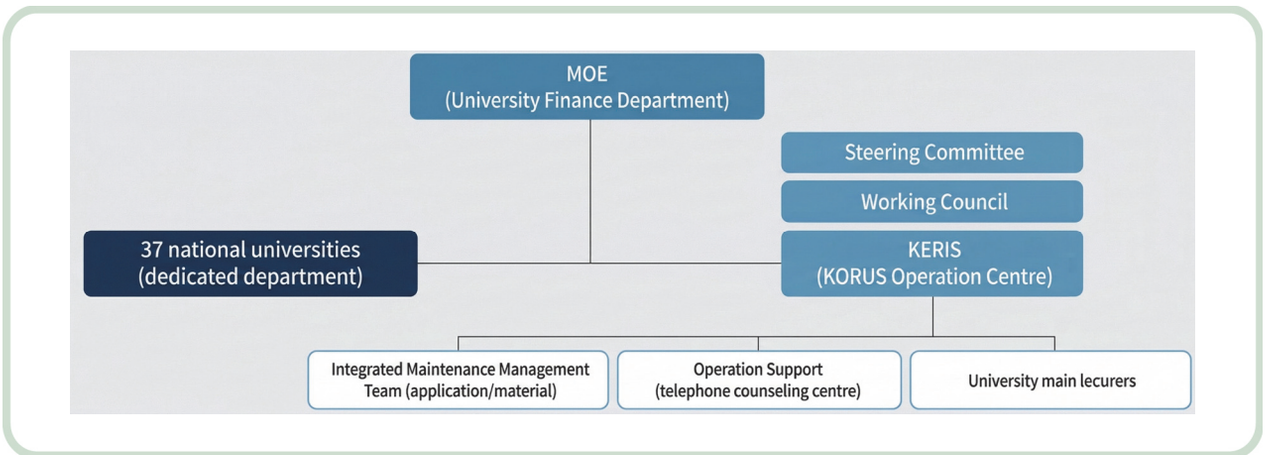
RISS provides integrated search services for the following materials: 1) Theses from domestic universities collected and constructed through the digital academic information distribution system (dCollection); 2) A list of academic materials and collection information of over 800 universities (institutions) nationwide established through a comprehensive list distribution channel (Union Catalog); 3) Foreign academic materials expanded through overseas electronic information subscription and operation of the Foreign Research Information Centre (FRIC); and 4) academic materials produced by central ministries, academic societies, and private institutions.

As of June 2023, over 7.98 million original texts of domestic and foreign academic materials and over 70 million metadata have been established, and to ensure that more users can easily use the data, it operates a no-login policy- based service that allows users to search and view the data without a registration process freely.

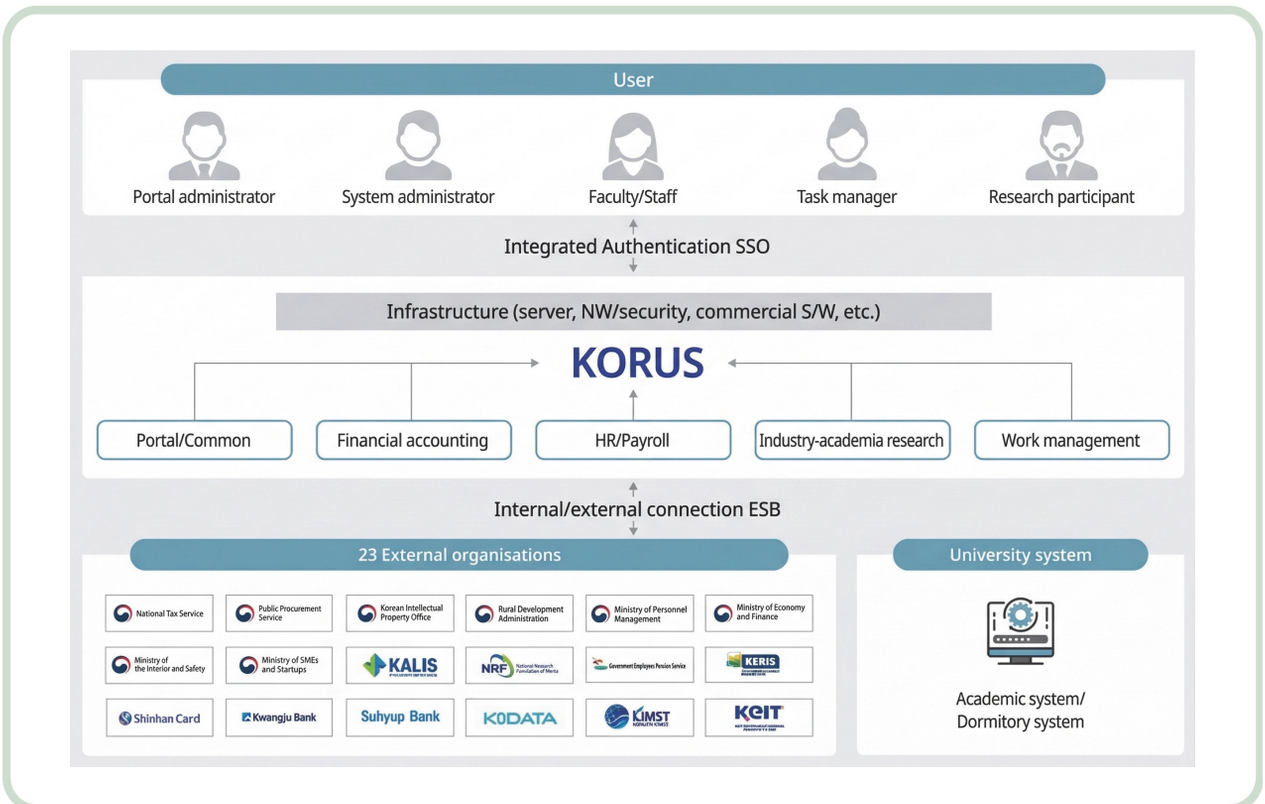
4.8.2 KORUS

KORUS was fully opened in 2017 after establishing the Information Strategy Plan (ISP) according to the National University Advancement Plan (Ministry of Education, Science and Technology) announcement in 2010 and going through the information system establishment stage. Since then, policies have been established in accordance with the basic plan of the Ministry of Education, and the KORUS operator has been completely converted to KERIS (Korea Education Research Information Service).

KORUS is a system that comprehensively supports the administrative and financial affairs of 37 national universities and consists of 132- unit tasks and 9,257 programs in 5 areas, including portal/common, finance/accounting, HR/payroll, industry/academia research, and work management.



※ **Figure 4.12** KORUS Promotion System



※ **Figure 4.13** Structure of KORUS

Sub-Category	Key project	Activity	Promotion period		
			Short-term	Mid-term	Long-term
D.1 Educational Services	D.1.1 ODeL Education Programs	D.1.1.1 Provision of ODeL Programs centered on MAK	√		
		D.1.1.2 Provision of ODeL Programs and Exchanges with Other Ugandan Universities		√	
		D.1.1.3 Provision of ODeL Programs with Universities in Other Countries and Attracting International Students			√
	D.1.2 ODel Degree Operations	D.1.2.1 ODeL Bachelor's Degree		√	
		D.1.2.2 ODeL Master's Degree	√		
		D.1.2.3 ODeL Doctoral Degree			√
	D.1.3 Students	D.1.3.1 Ugandan University Students	√	√	
		D.1.3.2 Students from Other Countries (International Students)			√
		D.1.3.3 Ugandan Adult Learners (Lifelong/Vocational Training)			√
D.2 School Finance	D.2.1 Securing Finance	D.2.1.1 Securing Stable Finance		√	√

❊ **Figure 4.14** Structure of ODeL Program

4.9 Results

Enhancing the Distance Education Environment at Makerere is bound to pave way for generation of revenue as well as leading to cost reduction, especially in the bills accrued to students' physical presence at the university. ODeL can be beneficial, as elucidated below:

4.9.1 Revenue Generation

Mak can diversify programs offering online, catering to various interests and needs which can attract different demographic groups. ODeL incurs lower operational costs than traditional programs. Developing high-quality ODeL courses enhances learning at Mak while creating revenue opportunities that strengthen university finances and reward instructors. Utilizing the KOICA-funded studio can be one way to generate supplementary revenue for the university through external digital content production. Moreover, Mak could actively recruit international students by taking full advantage of unique aspects of ODeL programs and providing necessary support for their transition.

4.9.2 Related cases of KNOU Prime College and KNOU Media-lab Revenue Generation

At KNOU Prime college, the Lifelong Education Program operates over 80 courses annually across four terms, serving more than 6,500 learners, including KNOU students and the general public. ODeL Course development is led by KNOU faculty, with eight new courses produced each year, and a development fee of approximately $7,000 awarded to the responsible professor. In addition, KNOU Media Lab funds university development by creating digital content for external organisations, supporting initiatives like the KNOU Learning Platform. In

2024, a total of 27 outsourced content development projects were awarded, with a budget of $400,000.

4.9.3 Cost Reduction

ODeL incurs lower operational costs than traditional programs. Once Mak adopts ODeL, it can include savings on physical infrastructure and maintenance. ODeL courses can be offered at reduced fees, attracting more students who seek affordable education. It can increase enrollment numbers, compensating for lower fees with higher volume.

05

Mid/Long-term Development Plan for ICT Infrastructure

05

Mid/Long-term Development Plan for ICT Infrastructure

5.1 Outline of MAK ISP (Information Strategy Planning)

Objectives

The main long-term objectives for Makerere University's Masterplan for eLearning include:

- ☑ Enhance Access - Increase access to education for students from diverse backgrounds, locations, and socio-economic statuses.
- ☑ Improve Quality- Integrate technology-enhanced learning to improve teaching, learning, and research quality.
- ☑ Foster Innovation - Encourage innovation and experimentation in eLearning pedagogies, content, and delivery.
- ☑ Build Capacity - Develop the capacity of staff and students to effectively utilize eLearning technologies.

5.1.1 Vision and goals of digital transformation

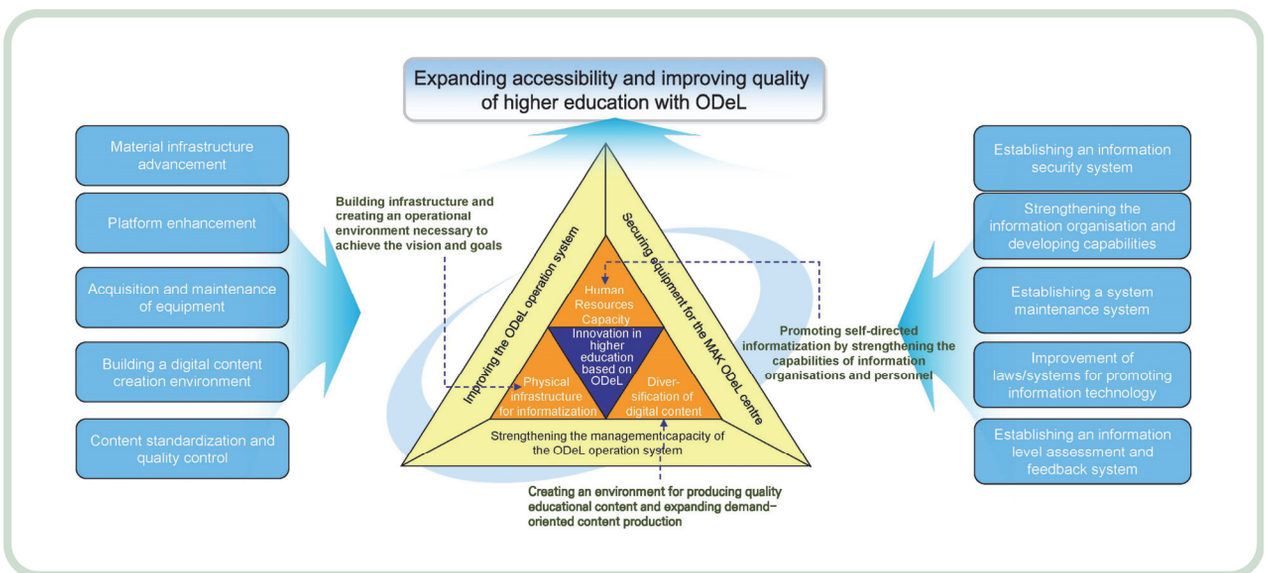
Vision and Goals Strategies

The Mid/long-term strategies include the following:

- ☑ Infrastructure Development - Upgrade and expand ICT infrastructure to support eLearning, including reliable internet, learning management systems, and digital repositories.
- ☑ Content Development - Develop high-quality, engaging, and interactive eLearning content, including multimedia resources and virtual labs.
- ☑ Staff Training: Provide ongoing training and support for staff to develop eLearning skills and integrate technology into teaching practices.
- ☑ Student Support: Offer technical support, digital literacy training, and access to eLearning resources for students.
- ☑ Collaboration: Foster partnerships with industry, government, and international institutions to enhance eLearning initiatives.
- ☑ Quality Assurance: Establish quality assurance mechanisms to ensure eLearning programs meet institutional standards.

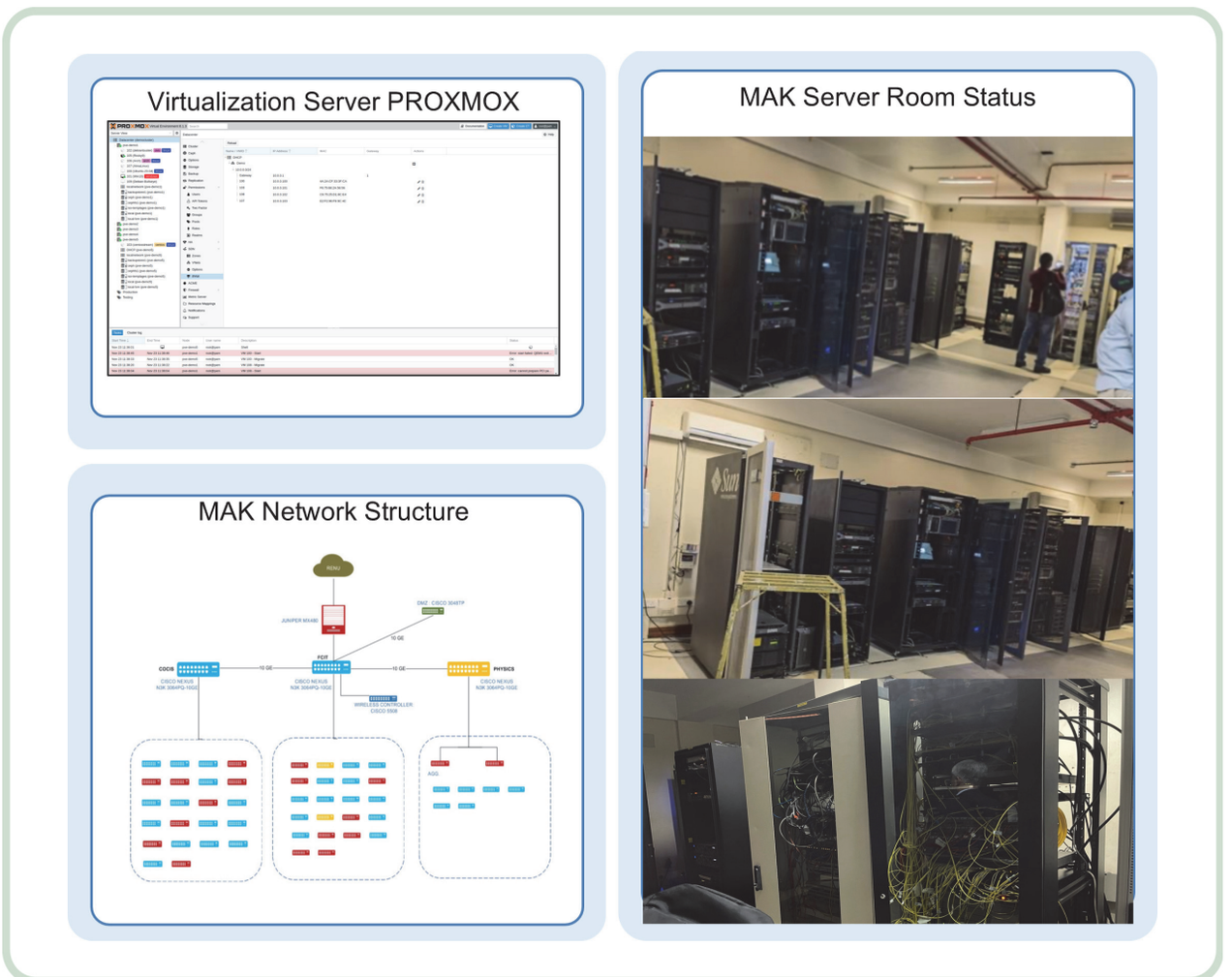
Implementation Plan

- ☑ Short-Term (2023-2025): - Develop eLearning infrastructure, train staff, and pilot eLearning programs.
- ☑ Medium-Term (2025-2030): Expand eLearning programs, develop digital repositories, and enhance student support services.
- ☑ Long-Term (2030-2035): - Establish Makerere University as a regional eLearning hub, develop innovative eLearning models, and explore new technologies (e.g., AI, AR/VR).



❊ **Figure 5.1** Visions and Goals of Digital Transformation

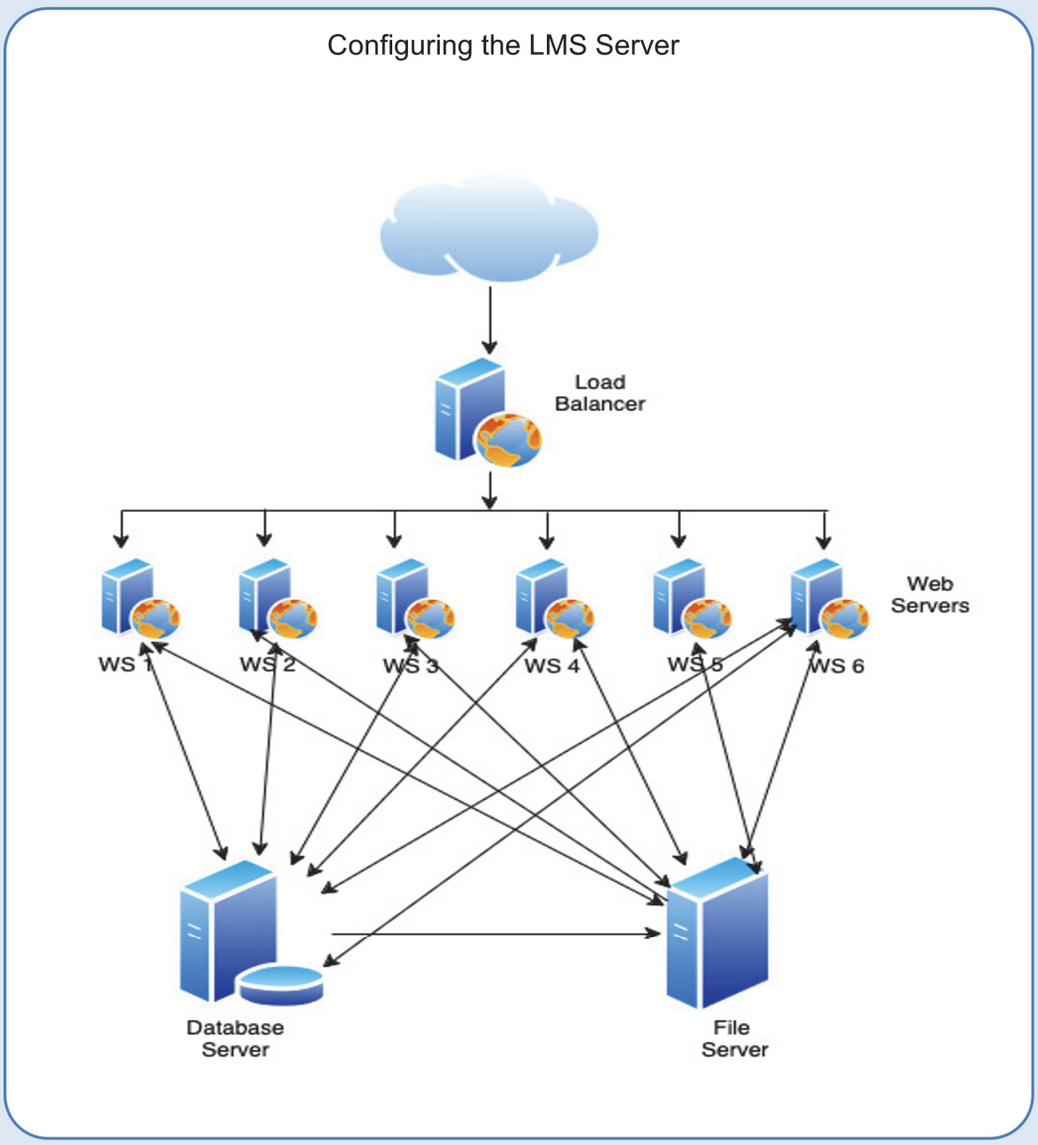
5.1.2 Current status and challenges



※ **Figure 5.2** Current Status and Challenges

The university's fiber optic backbone has been established up to the entry point, but the network fiber optic setup varies across individual colleges within the MAK, resulting in differences in internet speed. DICTS manages the servers in the server room, and there are only two virtual servers available for using MUELE. The MUELE server uses the virtualization server PROXMOX, and to accommodate the increase in concurrent users, additional web servers are being added through virtualization. MySQL is used for the database to ensure speed.

The MUELE server consists of six virtual servers, with load balancing handled by a Load Balancer. The Load Balancer is configured in software form, and the database operates as a stand-alone system using MySQL. The file server is mounted on each web server to share and use files. Videos are hosted on YouTube, and an internal video server is not set up. This poses a challenge due to potential cost issues for students using videos. Additionally, due to the lack of an integrated membership system, students must individually register for each system using the email address assigned upon admission. There is no system for separately storing, managing, and searching content as depicted in Figure 5.3.

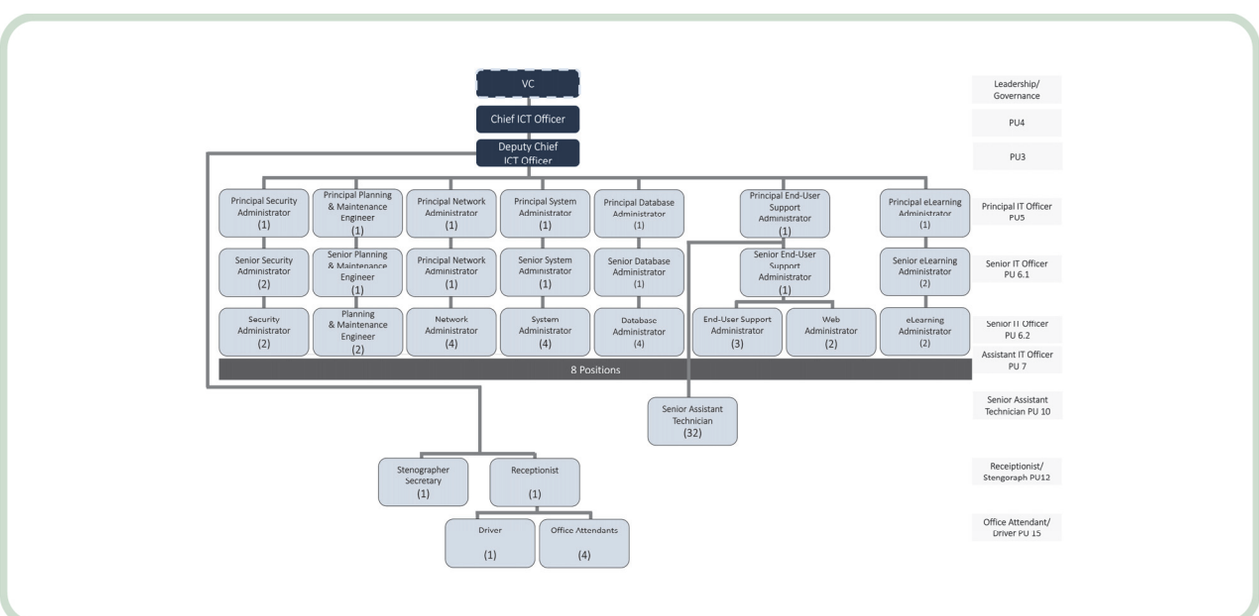


❊ **Figure 5.3** Makerere University Server System

❊ **Table 5.1** Current Status of LMS/Infra

Current Status	
LMS • Using the open-source Moodle • There is no integration with other systems, such as the education management information system • If there are many simultaneous connections within MAK, there are operational issues with the system	• The LMS uses the Moodle and has been upgraded to version 4.16 in 2023 • It appears that there is no integration with the in-house developed EMIS as an academic system • After student admission, individual email addresses are created, and students use these to register for each university system separately. • SSO between 3 systems including MUELE is working but data integration is required. • Using YouTube for video content results in data charges • Two physical virtualization servers are owned, and open-source Proxmox is used to virtualize web servers, database servers, etc. • There are differences in internet speed among different colleges, and there are issues with WiFi access and speed available to students • DITCS is responsible for managing and operating software/hardware, but there is a lack of systematic management.
Infra Operating Proxmox, a virtualization server for LMS management • The university's internet maintains an inbound speed of 2G and an internal speed of 80M • Using YouTube for storing and Managing video content	

The department responsible for managing and operating the MAK's IT sector is DICTS, handling the operation and management of networks, servers, software, and databases. There are plans to organize some roles in the future, but there is currently no actual staff, especially for ODeL.



❊ **Figure 5.4** Organisational Structure of DICTS

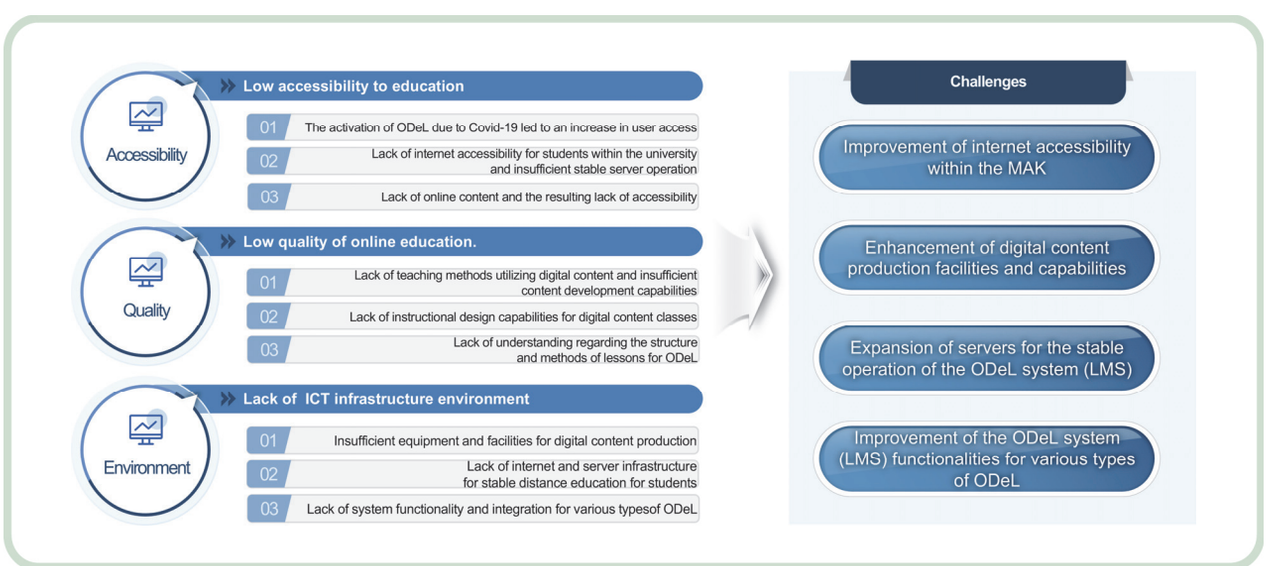
DICTS is the organisation responsible for managing and operating the Mak's IT sector and is in charge of operating the LMS system. The organisational structure of DICTS consists of a department head, deputy department heads as decision-making members, and subordinate members who serve as heads of each field. There are plans to organize departments in security, network, DB, web, system, and ODeL. However, some roles (indicated by red boxes) are conceptually structured but do not have actual members yet. The LMS system for ODeL is installed and operational, but there is no staff available to customize or develop new features.

5.1.3 Student enrollment status

In the 2019/2020 academic year, a total of 9,411 students were enrolled in online courses, accounting for 22.7% of all students. Since MUELE began operating in 2009, approximately 50,000 members have registered with the system. Notably, in March 2020, around 3,000 students registered and used MUELE intensively. 13,391 active students are using MUELE in 2025.

❊ **Table 5.2** Number of students enrolled in MUELE

Users	Number
Total cumulative registered users in MUELE since 2009	52,489
Total registered users between July 1 2019 and March 16, 2020	9,411
Total registered users between March 1 and 16 2020	3,468



❊ **Figure 5.5** Current Status and Challenges of Mak's ISP

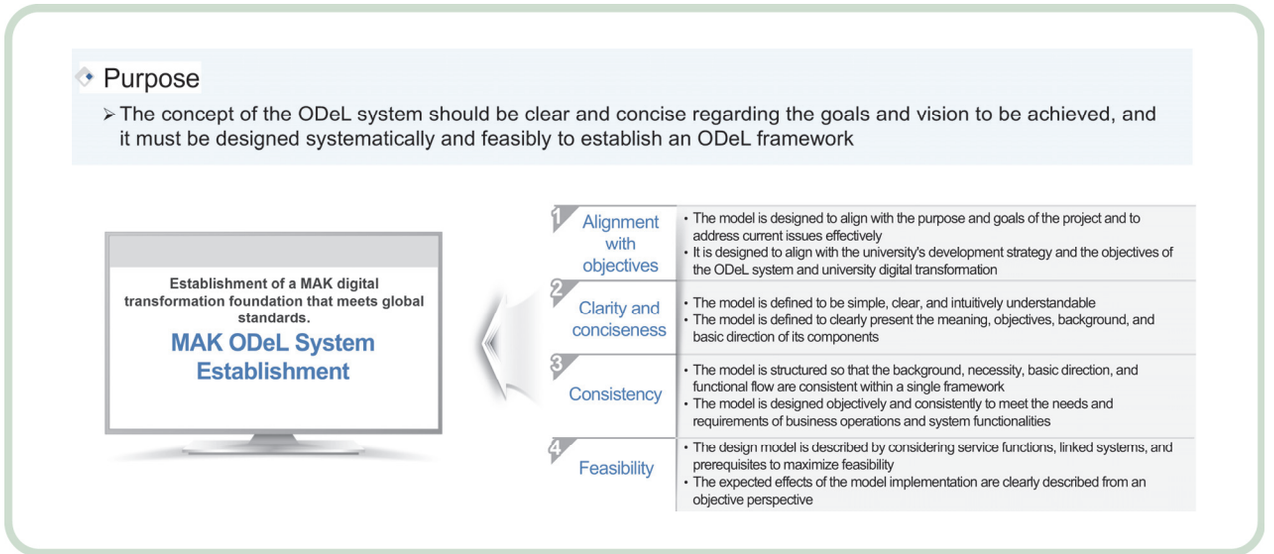
5.1.4 Strategy

※ Table 5.2 Analysis and Key Factors of Mak's ISP

Analysis Target		Key Factors
Information Technology aspect	• Internet infrastructure Analysis • ODeL System Analysis • Legacy System Analysis	• The LMS uses the Moodle and has been upgraded to version 4.16 in 2023 • It appears that there is no integration with the in-house developed EMIS as an academic system • After student admission, individual email addresses are created, and students use these to register for each university system separately. • SSO between 3 systems including MUELE is working but data integration is required. • Using YouTube for video content results in data charges • Two physical virtualization servers are owned, and open-source Proxmox is used to virtualize web servers, database servers, etc. • There are differences in internet speed among different colleges, and there are issues with WiFi access and speed available to students • DITCS is responsible for managing and operating software/hardware, but there is a lack of systematic management.
Facility aspect	• Content production facility analysis • Server room analysis	
Human Resources aspect	• Legal and institutional analysis • HW/SW operation capability analysis • Content facility operation capability analysis • IT organisation analysis	• Implementation of technology infrastructure considering accessibility, ease of use, and low maintenance costs • Proposal for an advanced LMS-Based Coursework Management System and Content Management Development Model • Continuous investment in IT and the establishment of a support system for a high level of digital transformation • Proposal for an advanced model for digital content production facilities and system integration • Proposal of digital transformation policies in accordance with the university's mid-to-long-term model Proposal for organisational strengthening and capability development model to improve HW/SW operational capabilities

- Short-term tasks focus on improving infrastructure for ODeL and refining conditions to enhance student satisfaction. Long-term tasks aim to complete the MAK ODeL system and enable it to grow into a leading institution for ODeL in Africa
- By establishing an ODeL campus utilizing online platforms, the goal is to enhance the educational information system to harmonize the operation of both online and offline education at the university
- The goal is to create a foundation for building an information system that supports individual career planning and development for students and increases the employment rate of graduates in the future
- A foundation is being established to expand the reach of lifelong education, a key role of ODeL, by building a system that allows adult learners, local residents, and others seeking lifelong education to access high-quality content without burden

❊ **Figure 5.6** Plan-Do-Check-Feedback Circle of Mak's ISP



❊ Figure 5.7 MaK ODeL System Establishment Strategy

5.1.5 Technology Promotion Tasks

The future-oriented development direction of the ODeL system is derived based on the MAK's current status and environmental analysis. The priorities of the derived action tasks are evaluated based on global evaluation standards and implementing organisation's knowledge.

❊ Table 5.3 Technology Promotion Tasks

Priority	Task	Task Name	Importance	Urgency	Score	Step
1	Task 1	Advancement of the IT infrastructure for the ODeL system	5	5	10	Short (PMC)
	Task 2	Advancement of platforms such as the LMS and CMS for the ODeL system	5	5	10	
	Task 3	Procurement and maintenance of equipment for digital transformation initiatives	5	5	10	
	Task 4	Creation of digital content production environment	5	5	10	
	Task 5	Establishment of a foundation for content standardization and quality management	5	5	10	
2	Task 6	Establishment of an information security system	4	4	8	Middle
3	Task 7	Strengthening of the digital transformation organisation and capacity building	4	3	7	
4	Task 8	Establishment of a maintenance system for the information system	3	3	6	Long
5	Task 9	Establishment of laws and regulations for promoting digital transformation	3	2	5	
	Task 10	Establishment of an evaluation and feedback system for the level of digital transformation	3	2	5	

Technology Promotion Tasks

The relationship between the university's development strategy and the action tasks is analyzed and defined, based on the definition of the action tasks. Specific details are defined to present the direction for establishing the ODeL system and digital transformation as indicated below:

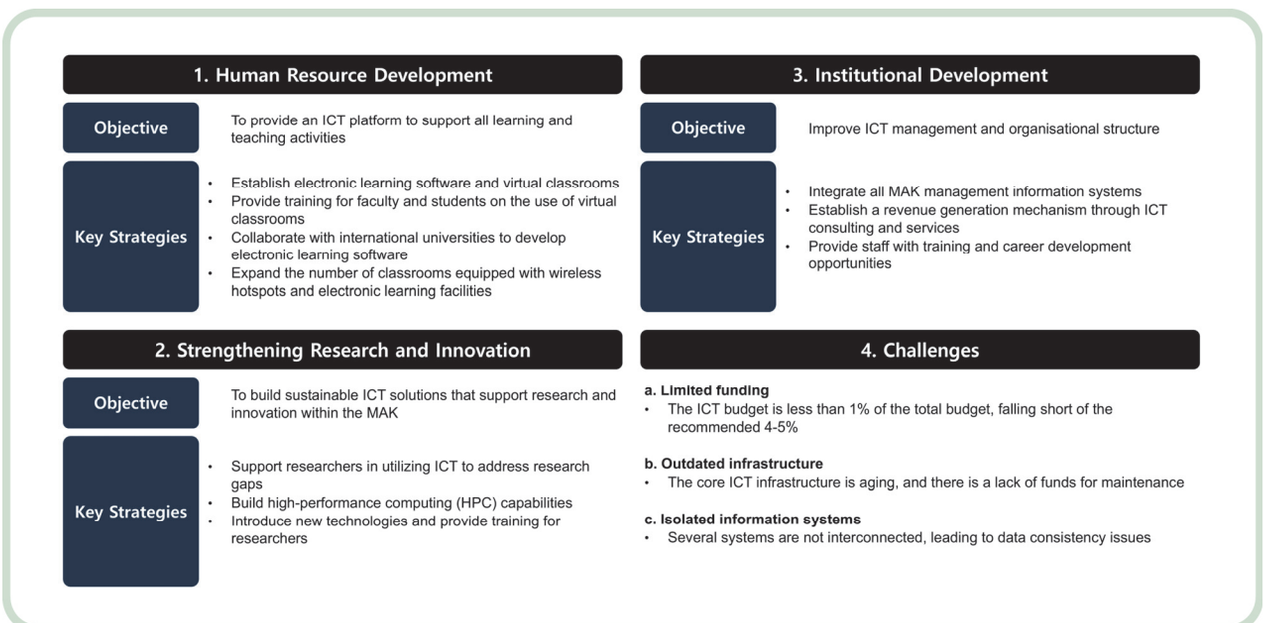
※ Table 5.4 10 Key Tasks for Promoting digital transformation

No	Category	Tasks
1	Advancement of the IT infrastructure for the ODeL system	• Propose a plan for advancing the physical infrastructure of the information service system that constitutes the ODeL system, including servers, DBMS, system software, search engines, etc., and suggest a long-term plan to adopt and utilize cloud solutions.
2	Advancement of platforms such as the LMS and CMS for the ODeL System	• Propose a plan for the development, improvement, and advancement of software that provides the ODeL system environment, including Moodle LMS, CMS, and SSO.
3	Procurement and maintenance of equipment for promoting digital transformation	• Propose the specifications, quantity, and scale of various equipment to be introduced through this project, excluding the ODeL system. • Additionally, suggest a plan for expanding equipment input in the mid-to-long-term.
4	Creation of digital content production environment.	• Propose a plan for the introduction and development of content production support equipment, such as studios, cameras, and editing tools, to be implemented through this project
5	Establishment of a foundation for content standardization and quality management	• Propose a plan to improve the issues with the DDD content production guide and to develop and provide metadata standardization methods, as well as content quality management standards and methods, aimed at OSMU (One Source Multi Use) and COPE (Create Once, Publish Everywhere). This will create a foundation for securing and utilizing sustainable content
6	Establishment of an information security system	• Propose action tasks based on the ISMS (Information Security Management System) standards, including physical, technical, and administrative security measures to protect personal information accumulated during the operation of the ODeL system and to prevent various information security incidents such as hacking
7	Strengthening the digital transformation organisation and developing its capabilities.	• Propose a diagnosis and improvement plan for the current Mak digital transformation organisation, along with a plan for continuous capacity building. • Additionally, suggest elements needed to enforce this process and assign authority and responsibility, as well as an implementation plan.

8	Establishment of a maintenance system for the information system	• Propose a plan for continuous maintenance and management, as well as the necessary organisational structure, for the hardware and software systems, application systems, equipment, studios, and other elements that will be newly established or upgraded through this project.
9	Improvement of laws and regulations for promoting digital transformation	• Propose legal and institutional improvement plans at the MAK, local government, and national levels to ensure that a sustainable informatization system can be operated and developed. • In particular, identify and propose institutional reforms necessary for Mak to provide distance higher education services in Uganda.
10	Establishment of an evaluation and feedback system for the level of digital transformation	• Propose an evaluation system for regularly assessing, improving, and continuously implementing the level of informatization. • This should include evaluation elements and methods from various perspectives, such as physical standards, technical standards, organisational standards, and stakeholder competency standards, as well as plans for utilizing the evaluation results.

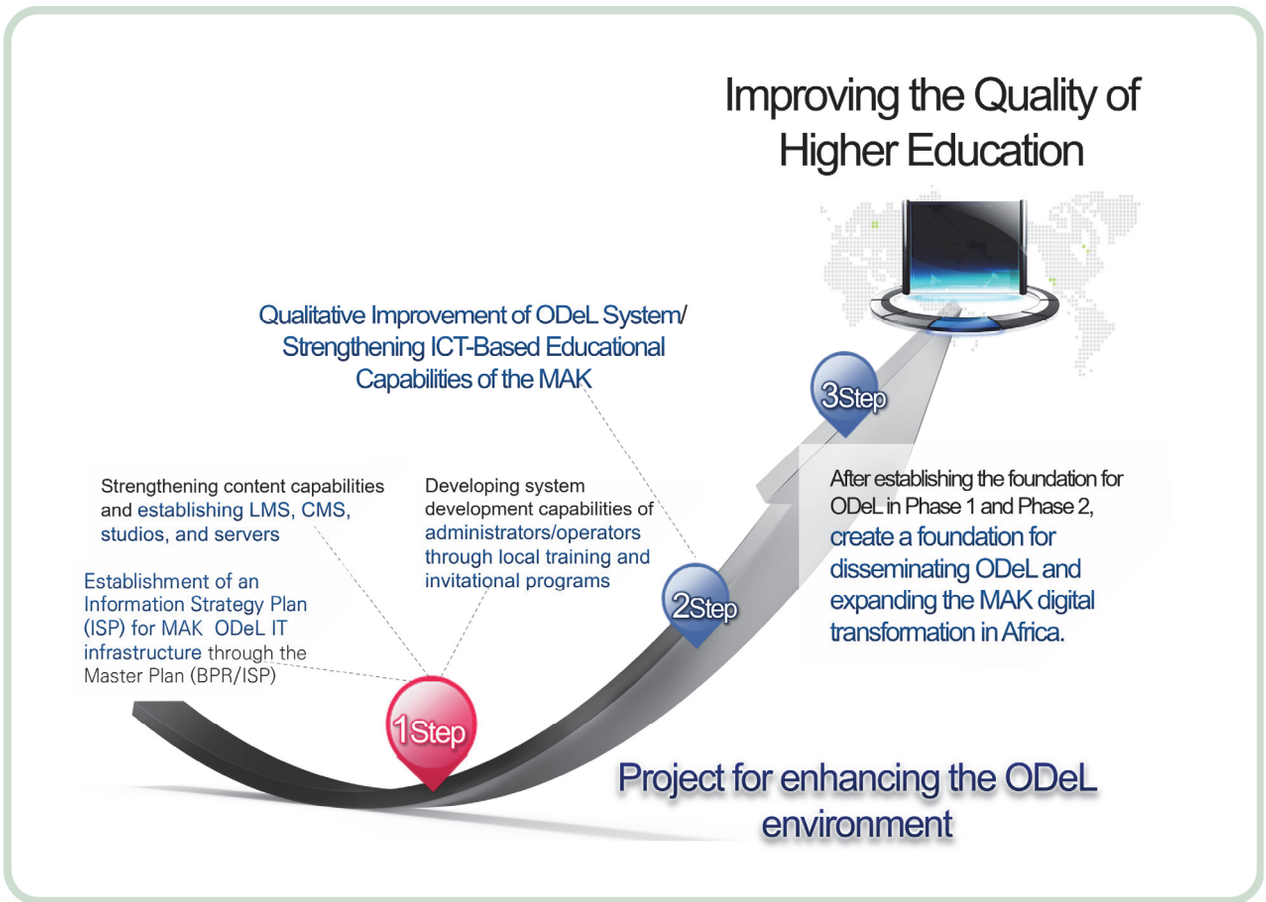
5.1.6 IT Advancement Roadmap

Mak aims to improve its research, education, and learning environment through ICT and enhance its global competitiveness. In line with Vision 2040 and NDPII 2015/16–2019/20, ICT plays a crucial role in increasing national productivity, promoting economic growth, and improving the availability of digital content and electronic products. The Mak seeks to leverage ICT to foster innovation, commercialize research, improve the efficiency of government and businesses, and strengthen its global competitiveness



❊ Figure 5.8 Strategic Goals

The Mak's mid-to-long-term digital transformation roadmap aims to establish the highest level of ODeL environment in Africa and create a sustainable IT infrastructure and governance system. To achieve this, 10 key tasks have been set, including advancing the ODeL system, optimizing the platform, creating a digital content production environment, and establishing an information security system. Step-by-step implementation plans have been developed for 2030, 2035, and 2040 to strengthen the Mak digital transformation.



※ **Figure 5.9** IT Advancement Roadmap

ICT Advancement Roadmap

- ☑ Define the ODeL development in phases and present future development directions
- ☑ Propose development stages that align with Uganda's education development strategy

❊ Table 5.5 ODeL Development in Phase

Step 1	Step 2	Step 3
Establishing the development direction based on the Masterplan and Establishment of ODeL Infrastructure: • Server Expansion and Internet Upgrade • Establishment of Content Development Facilities • Advancement of ODeL Systems such as LMS and CMS Training of Software/Hardware Personnel: • Strengthening Hardware Operation Capabilities for stability and Concurrent Access • -Strengthening LMS development Capabilities to Support Various Teaching and Learning Methods	Systematization of the MAK digital transformation Organisation ODeL Policies and Systems at Leading Universities in Uganda for ODeL; • Establishment of a Digital transformation foundation for the qualitative improvement of ODeL • Establishment of digital transformation concept for promoting various forms of ODeL Digital transformation for expanding the Base of Lifelong Education • Preparation to Ensure Accessibility to Lifelong Learning for All Citizens • Strengthening Industry-academia Collaboration and Practice-Oriented digital transformation	Establishing the Hub for ODeL in East Africa: • Establishment of a Digital transformation Model Capable of Accommodating Various ODeL Teaching and Learning Models • Establishment of an infrastructure expansion Strategy for Stable Operations • Stable Operations through the expansion of Virtualization (Cloud) concepts • Preparation for Embracing the Fourth Industrial Revolution: • Establishment of an AI-based infrastructure for ODeL • Proposing a Personalized Learning Model through Learning Analytics

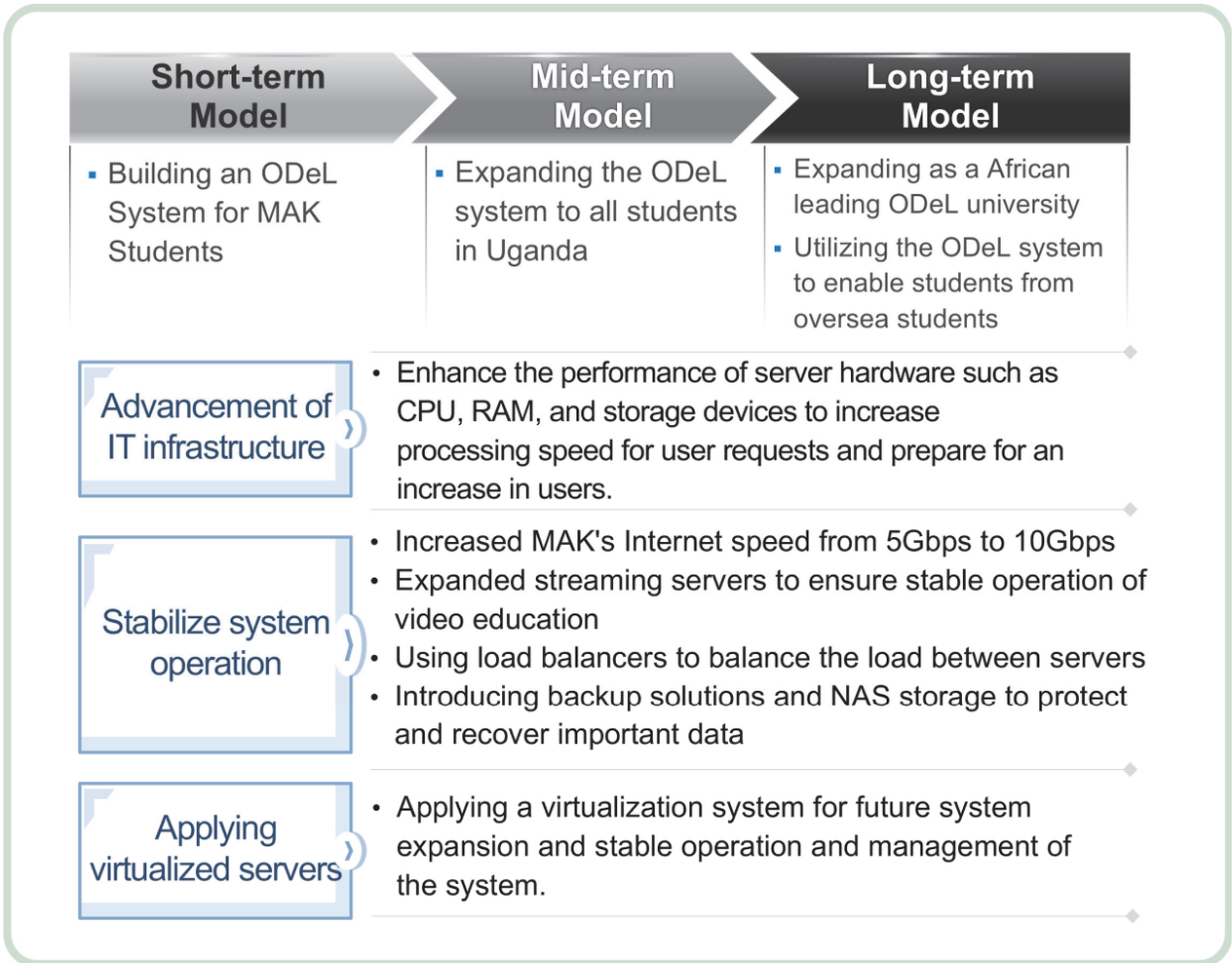
5.2 ISP (Information Strategy Planning) for ODeL

5.2.1 Advancement of the ICT Infrastructure for the ODeL System

The goal is to build the highest level of ODeL environment in Africa through the Mak digital transformation.

The IT infrastructure of the Mak ODeL system is improved to ensure simultaneous access for multiple students to the ODeL system and to create a smooth ODeL environment. The ODeL system is designed with expandability in mind to respond to future increases in users and new applications.

The ODeL system is designed with capacity, and a virtualization solution is introduced to enable easy system expansion and operation. In the KOICA project, 3,500 people were considered to be connected simultaneously, 10% of the total 35,000 students.



※ **Figure 5.10** Advancement of the IT Infrastructure for the ODeL System

※ **Table 5.6** Target application server details for the ODeL system

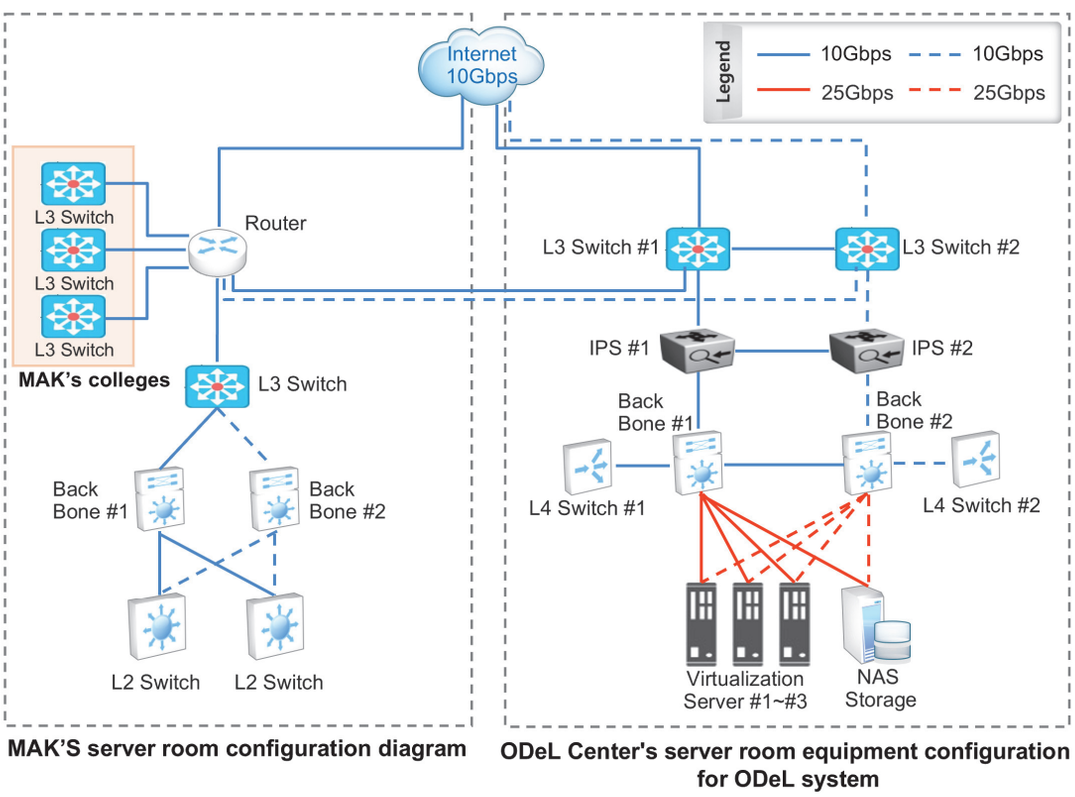
No	Product	Q'ty	Core	Core Sum	RAM	RAM SUM
1	Portal Server	2	16	32	32	64
2	Web Server	2	16	32	16	32
3	LMS Server	2	16	32	16	32
4	LDAP Server	3	16	48	32	96
5	SMS Backup Server	2	16	32	32	64
6	DB Server	4	32	128	32	128
7	Streaming Server	2	16	32	16	32
8	Repository Server	2	16	32	16	32
Total		19	144	368	192	480

※ **Table 5.7** Specifications of virtualized servers for operating application servers

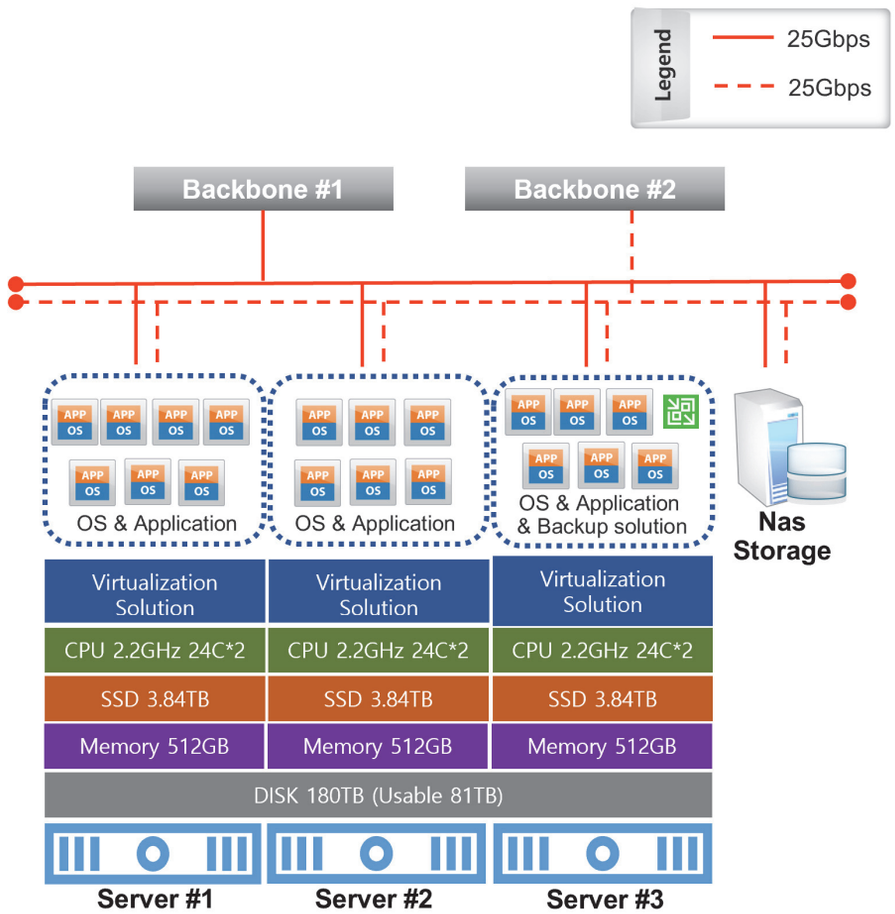
☑ Apply 400% virtualization rate

☑ Apply 1 server for fail-over

Division	Node		
	1	2	3
CPU	2.2GHz/48 Core	2.2GHz/48 Core	2.2GHz/48 Core
	144Core		
MEMORY	512GB	512GB	512GB
	1.53TB		
DISK	60TB	60TB	60TB
	180TB (Usable 81TB)		

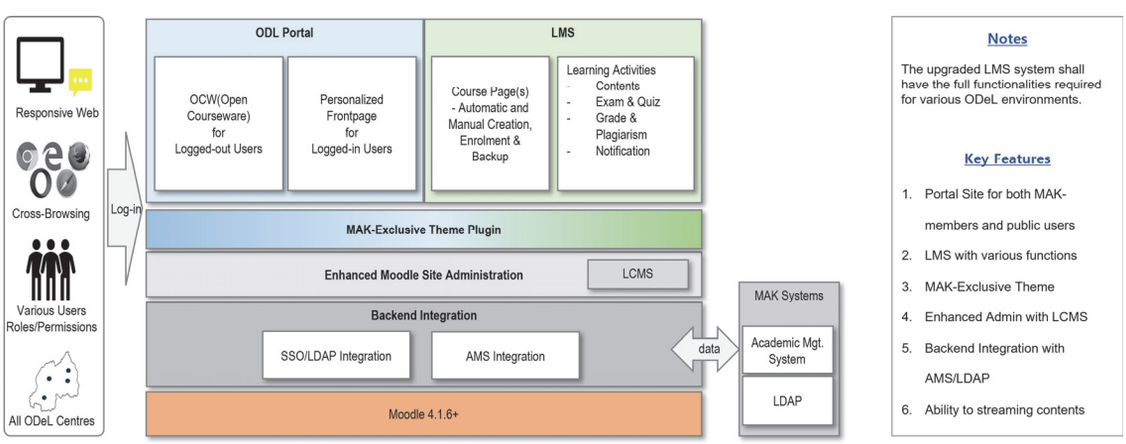


※ **Figure 5.11** Target IT Infrastructure Configuration Diagram of ODeL System



※ Figure 5.12 Target Virtualization System Configuration

5.2.2 Improving ODeL Platform



※ Figure 5.13 To-Be Architecture of the MAK eLearning Platform (MUELE)

❊ Table 5.8 Standards of ODeL Platform

Category	Details	Description
W3C Spec.	• HTML4.01/ HTML 5 • XHTML 1.0 • CSS 2.1 • DOM Level 1,2,3 • JavaScript 1.2 (ECMA Script)	• Necessary for securing accessibility through Web by using various Web-Browser and mobile devices
Web Accessibility	• W3C Web Accessibility Initiative • Web Content Accessibility Guidelines	• How to make web content more accessible to people with disabilities
Cross Browsing	• Microsoft Edge • Firefox • Opera, Safari, Google chrome	• MAK's selection of preferred browsers is required
Separation of Structure/Expression /Action	• CSS Layout • HTML structuring • Separating Design(CSS) and HTML, JavaScript	• By using CSS, totally manage the Layout and Design

❊ Table 5.9 Hybrid App. Technology

Bootstrap	• HTML, CSS, JS Framework that can easily provide hybrid Apps. environment
Media Query	• Able to implement multiple view with one source
Meta viewport	• Attribute of metadata that handle the resolution of device
Browser	• Chrome, Firefox, Safari, Edge

5.2.3 Procurement and Maintenance of IT Equipment

Plan for stable IT equipment procurement

In addition to the system for ODeL, the Mak ODeL Centre is composed of facilities for various purposes, such as content production space, seminar space, and professor research space. Each room is divided according to its intended use, so we analyze the technical requirements required for each room and select equipment that is easy to expand and maintain to ensure operational stability. To accommodate the increasing number of students using the ODeL system, we propose a plan to expand the equipment required for the midterm and long-term models.

Plan to secure equipment for short-term operation

※ Table 5.10 Major components of the short-term model of the Mak ODeL Centre

No	Name of Space	No of Unit	Floor	No	Name of Space	No of Unit	Floor
1	Auditorium	1	GF	13	Studio Office	1	2F
2	Server & UPS Room	1	GF	14	Contents Editing/ Development Room	2	2F
3	Digital Lecture Room	3	1F	15	Instruction Design Room	2	2F
4	E-library	1	1F	16	Chief Room	1	3F
5	Group Study Room	3	1F	17	Secretary room	1	3F
6	Creative Lounge	1	1F	18	Administration office	1	3F
7	Canteen	1	1F	19	Pantry	1	3F
8	Guard room	1	1F	20	Seminar room	2	3F
9	Storage	3	1F, 2F, 3F	21	Meeting Room(L)	1	3F
10	Multi purpose Lecture Room	2	2F	22	Meeting Room(S)	1	3F
11	Studio & Control room	4	2F	23	Lab for professors	3	3F
12	Dress Room	1	2F	24	Koica Room	1	3F

※ Table 5.11 Short-term model ODeL Centre's actual equipment details plan

No	Name of Space	No of Space	Equipment	Remark
1	Auditorium	1	Audio System	
			Large Screen	
			High quality Projector	
2	Server & UPS Room	1	Virtualization Server	
			Backup solution	
			UPS for server (6k)	
			NAS storage (100TB)	
			server rack	
			L3 switch	
			Backbone Switch	
			L4 Switch	
			IPS	
			Air-condition	

			Access floor	
			CCTV System	
			printer(mono)	
			printer(color)	
			laptop	
			Access Control System	
			desk & chair	
			Cabinet	
3	Digital Lecture Room	3	Laptop	
			Printer	
			Projector	
			Smart Podium	
			Whiteboard	
			Desk & chair for Teacher	
			Desk & chair for Student	
			Cabinet	
4	E-library	1	i-Mac with table and chair	
			Table for cafeteria type	
			Chair	
			Display 65"	
			Desk & chair	
5	Group Study Room	3	Table	
			Chair	
			Whiteboard	
6	Creative Lounge	1	Table for cafeteria type (6 person)	
			Lounge sofa (6person)	
			Lounge sofa	
7	Canteen	1	Store display stand	
			Beverage fridge	
			Table	
			Chair	
			Cooking Utensils	
8	Guard room	1	Desk & chair	
			Cabinet	
9	Storage	3	Shelf Rack	
10	Multi purpose Lecture Room	2	Laptop	

			Printer	
			Projector	
			Video recorder	
			Smart Podium with AV System	
			Whiteboard	
			Desk & chair	
			Desk & chair	
			Cabinet	
11	Studio & Control room	4	Studio Camera	
			Prompter System	
			Tripod for HD Camera only	
			Tripod for prompter	
			Notebook for prompter	
			Studio Monitor	
			All in one video Switcher	
			Multiview Monitor	
			CHROMAKEY SCREEN	
			Video router 10 x 10	
			Backup video recorder	
			Audio Mixer	
			GOOSENECK MIC	
			W/L Mic for Camera	
			Wired mic	
			W/L MIC (PIN MIC SET)	
			Talkback MIC	
			Studio Speaker	
			Monitoring Speaker	
			Special Lighting	
			Console Desk	
			UPS	
			Air-condition	
			Rack	
			Installation materials	
12	Dress Room	1	vanity	
			clothes hanger	
13	Studio Office	1	Laptop	

			printer(color)	
			Desk & chair	
			Cabinet	
14	Contents Editing/ Development Room	2	NLE SYSTEM & Contents developing S/W	
			Nas Storage	Install in 1 Space
			Network Switch	
			Conference table	
			Chair	
			Whiteboard	
			Laser printer	
			Rack	
			UPS	
			Desk & chair	
15	Instruction Design Room	2	Laptop or Desktop	
			Laser printer	
			Desk & chair	
			Conference table	
16	Chief Room	1	Desktop PC or Laptop	
			Printer	
			Desk & chair	
			Sofa set	
			Tea table	
			Executive cabinet	
17	Secretary room	1	Laptop or Desktop	
			printer(mono)	
			Desk & chair	
			Cabinet	
18	Administration office	1	Laptop	
			printer(color)	
			Desk & chair	
19	Pantry	1	Shelf Rack	
20	Seminar room	2	Seminar table for 24 persons	
			Chair	
21	Meeting Room(S, L)	1	Meeting table & Chair	

			Display 65"	
			video conference system	
			Chair	
22	Lab for professors 1	3	Laptop	
			Desk & chair	
			Cabinet	
23	Koica Room	1	Desk & chair	
			Cabinet	

Plan to secure equipment for mid to long-term operation

ODeL's short-term roadmap aims to produce content and leverage the content produced in all Mak Colleges. ODeL's mid-term roadmap aims to expand ODeL throughout Uganda. ODeL's long-term roadmap aims to attract international students from across Africa.

To accommodate the growing number of ODeL users in the medium and long-term models, Mak needs to successfully complete the ODeL roadmap by increasing the number of studios and classrooms for content creation.

※ Table 5.12 ODeL Operation Play by Roadmap

	Short-term (~2030)	Mid-term (~2035)	Long-term (2036~)
Scope of Education Services	Mak	Mak + Ugandan Universities	Overseas (All over Africa)
ODeL curriculum operation	9 Colleges + 1 School	New ODeL Department within the College	Establishment of Cyber college in Uganda
Education Methods	Blended Learning	B/L, 100% online	B/L, 100% online
Target ODeL User Students	37000 (Mak student)	44000 [Mak student + 20% of Mak students (Students from other universities)]	52000 [Mid-term student + 20% of Mid-term students (Number of students across Africa)]
Expected number of concurrently connected students	3700 (10% of Short-term students)	4400 (10% of Mid-term students)	5200 (10% of Long-term students)

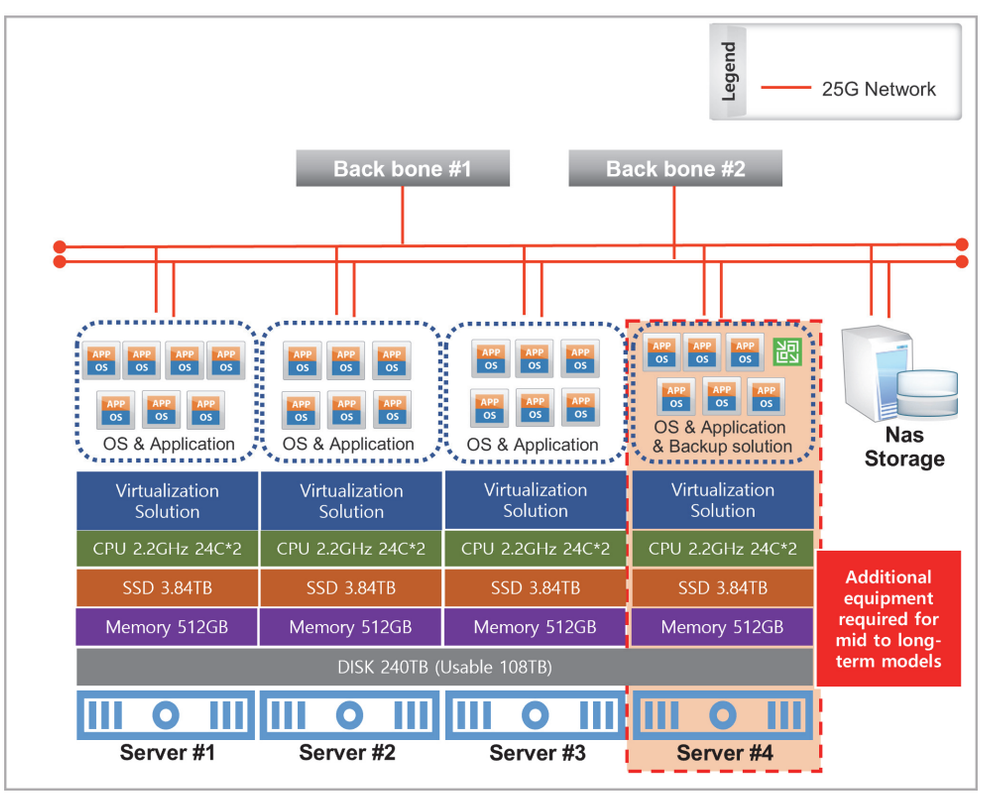
Application server details for mid to long-term operation.

No	Product	Q'ty	Core	Core Sum	RAM	RAM SUM
1	Portal Server	4	16	64	32	128
2	Web Server	2	16	32	16	32
3	LMS Server	4	16	64	16	64
4	LDAP Server	3	16	48	32	96
5	SMS Backup Server	2	16	32	32	64
6	DB Server	4	32	128	32	128
7	Streaming Server	4	16	64	16	64
8	Repository Server	2	16	32	16	32
9	Search engine Server	1	16	16	16	16
Total		**19**	**160**	**480**	**208**	**624**

Virtualization server calculation basis and specifications

Division	Node			
	1	2	3	4
CPU	2.2GHz/48 Core	2.2GHz/48 Core	2.2GHz/48 Core	2.2GHz/48 Core
	192Core			
MEMORY	512GB	512GB	512GB	512GB
	2.04TB			
DISK	60TB	60TB	60TB	60TB
	240TB(Usable 108TB)			

Server equipment configuration diagram for mid- to long-term operation

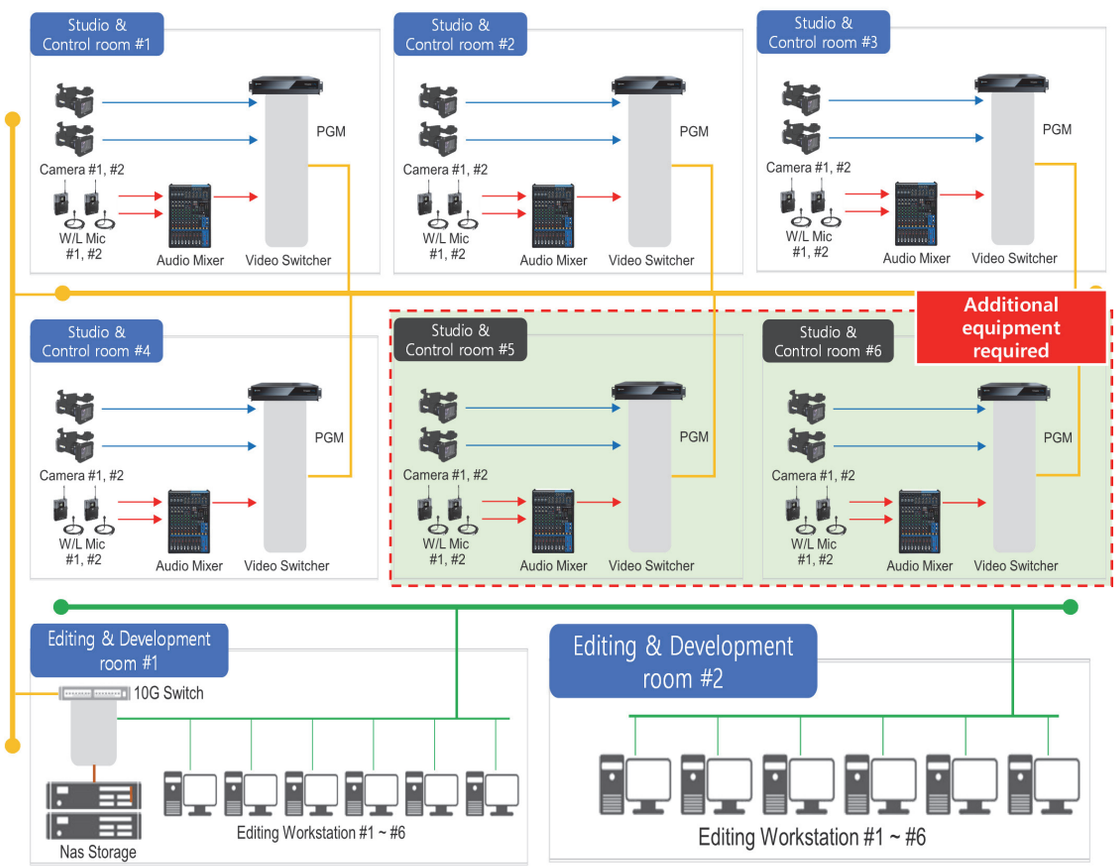


※ Figure 5.14 Server details in mid-long term operation

Number of content production studios required for mid- to long-term operation

	Short-term (~2030)	Mid-term (~2035)	Long-term (2036~)
Target ODeL User Students	37000	44000	52000
Expected number of concurrently connected students	3700	4400	5200
Number of educational content (30 minutes) produced per day	- 8 contents per studio - Total : 32 contents	- 8 contents per studio - Total : 40 contents	- 8 contents per studio - Total : 48 contents
Number of content creation studios required	4	5	6 +

Studio configuration plan for mid-to-long-term operation



❊ **Figure 5.15** Studio in mid-long term operation

Plan for stable maintenance

In order to operate the ODeL Centre stably, a maintenance plan is needed. In order for the ODeL Centre to operate stably, Users, Operators, Administrators, and external technical support companies must understand their respective roles and be faithful to their assigned tasks. The ultimate goal is to minimize external technical support and enable the members of the ODeL Centre to operate independently. In order to operate independently, education must be provided to the members of the ODeL Centre, and each member must be assigned a role.

※ Table 5.13 Plan for Stable Maintenance

	Users	Operators	Administrators	Technical support companies
Member	• Instructor • Educational content creator	• IT equipment and system administrators of ODeL centres	• Each room's operating manager • Centre's overall operating manager	• IT Equipment Supplier • IT Equipment Maintenance Company
Role	• Design and produce online lecture content • Record lecture • videos using studios and multi media classrooms	• Maintain equipment such as studios and server rooms and support users • IT equipment maintenance and first response to failures	• Establish centre operation policy, manage security and budget • Establish equipment purchase and maintenance plan	• Network, server, multimedia equipment maintenance and emergency technical support • Regular inspection and system upgrades
Required Training Content	• How to use content creation tools • How to use studio and classroom equipment • Copyright and privacy training	• ODeL Centre's equipment management method • Data backup and recovery method • Security policy and system upgrade management • Emergency failure response manual creation	• Cybersecurity and data protection policy training • Building a collaboration system between ODeL members • Quality control of ODeL operations and contract management with external technical support providers	• IT and Multimedia System Architecture Training at ODeL Centre • Establish equipment maintenance procedures and emergency recovery plans • Establish regular inspection and system update plans

5.2.4 Establishment of an e-tivity (Video format) content production environment

In this project, a studio and a multi-purpose lecture room will be built in the Mak ODeL Centre to produce video content in-house. Video content at the Mak ODeL Centre will be produced in the studio and the multi-purpose lecture room. The multi-purpose lecture room will produce e-tivity (Video format) content. A network-based video storage system will be introduced to facilitate expansion of content production facilities in the mid-to-long-term.

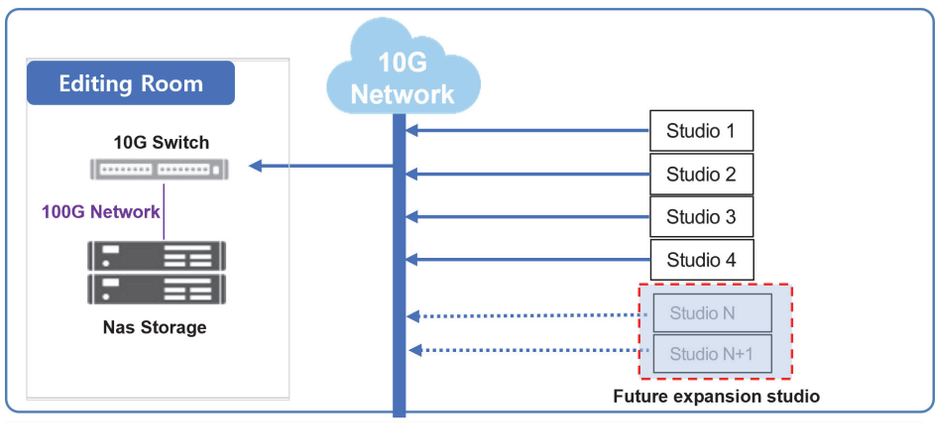
Studio & Contents Editing Room

- ☑ The studio will be equipped with a broadcasting system capable of producing HD video content. (Video content will be serviced in HD in the LMS system.)
- ☑ Because a network-based system will be built to facilitate video storage, it will be easy to expand the studio in the future.
- ☑ A system will be built to easily produce content using PPT, IMAGE, etc.

Multi-purpose lecture room

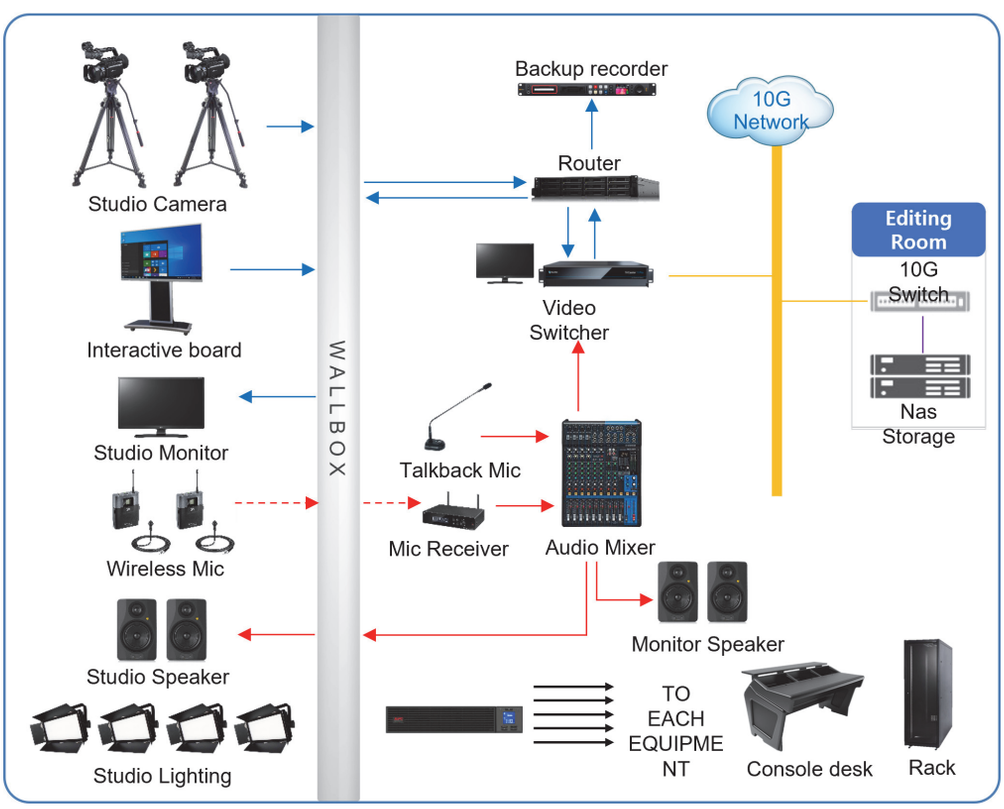
- ☑ In the multi-purpose lecture room, the lecturer conducts a lecture, and the lecture is filmed and used as an e-tivity (Video format) content.
- ☑ The e-tivity (Video format) content is filmed in HD resolution, and the filmed video is stored in the Nas Storage of the Contents Editing Room via the network.
- ☑ Since general lectures are also conducted here, an A/V system such as speakers is also installed.

Conceptual diagram of a studio video content storage system



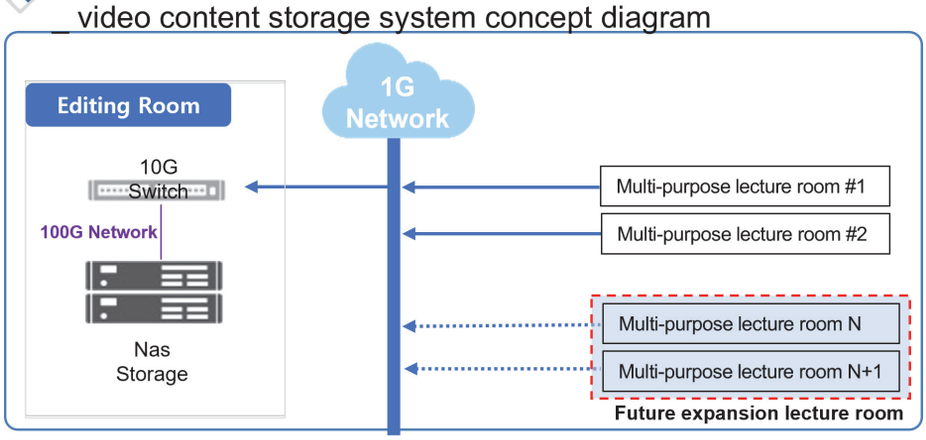
Division	Application plan
Scalability	• If a video switcher with an ingest function is installed when expanding the studio in the future, video can be stored in the NAS storage of the editing room via the 10G network
Efficiency	• Installation of an All-in-One Switcher that supports video switching, video storage, and virtual studio functions
Stability	• Since production is done at HD resolution 60P, high-performance editing equipment is applied.

Studio target configuration diagram



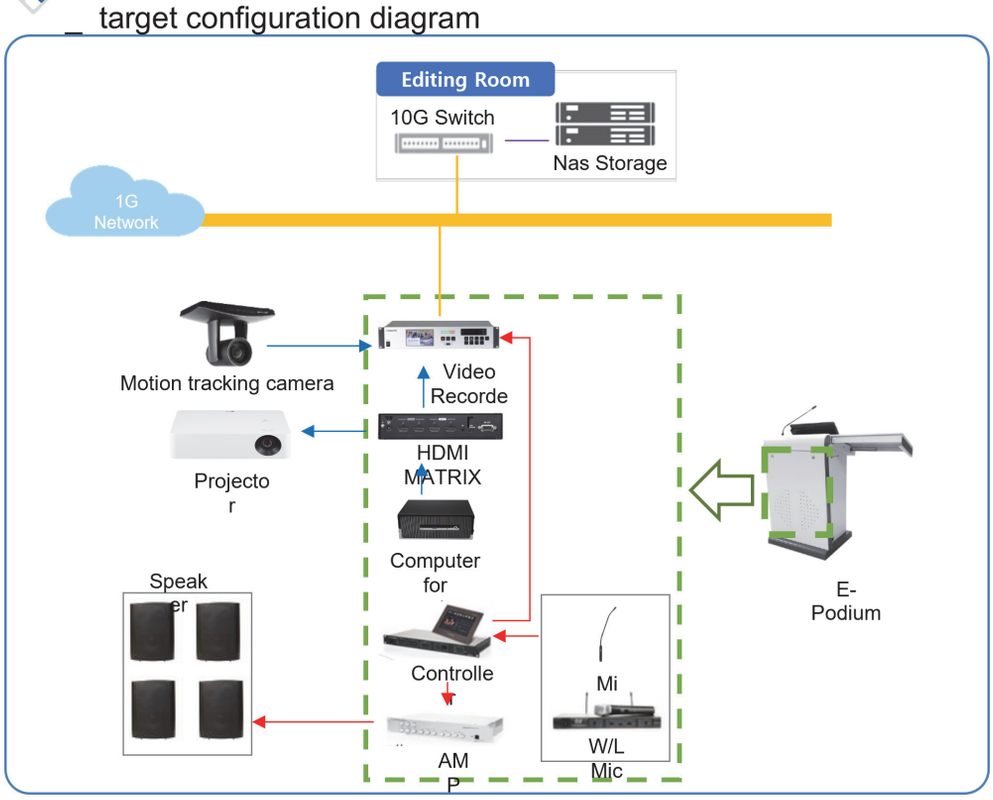
※ Figure 5.16 Diagram of Studio

Multi-purpose lecture room _ video content storage system concept diagram



구분	Application plan
Scalability	• When expanding the classroom in the future, install a video storage device that can transmit via FTP or 1G Network to store lecture recording videos.
Efficiency	• Easily record lecture videos without a cameraman using a location tracking camera • Install an electronic podium to easily control lecture room equipment

Multi-purpose lecture room _ target configuration diagram



※ **Figure 5.17** Diagram of Multi-purpose Lecture room

※ **Figure 5.18** Content Production Environment Diagram

5.2.5 Digital content standardization

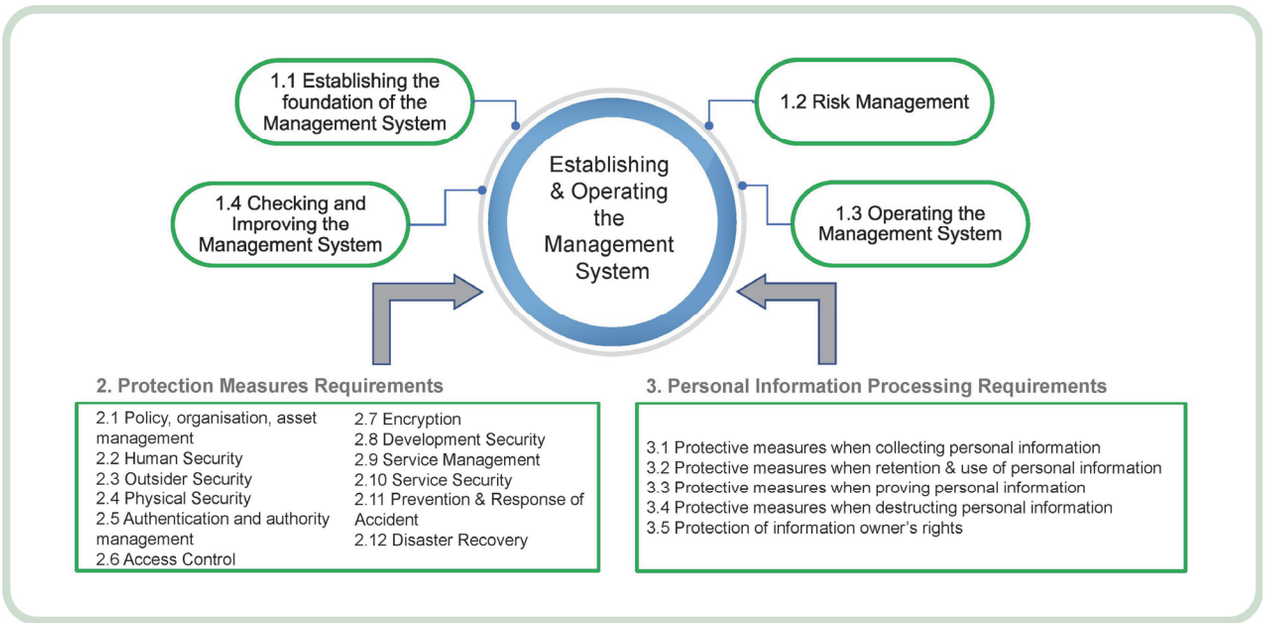
Purpose

Establishing a digital content standardization plan and implementation methodology to improve the problems of the content production guide utilized by Mak and to aim for OSMU (One Source Multi Use) and COPE (Create Once, Publish Everywhere).

Scope of standardization

- ☑ Definition of the scope of metadata standardization required to improve the efficiency of preservation, distribution, and maintenance of digital content produced by Mak's knowledge information producers and professors.
- ☑ Develop a physical production guide that includes formats, specifications, and capacities of digital files to produce and preserve digital content.
- ☑ Development of a packaging specification standard for loading digital content produced by instructors into ODeL systems
- ☑ Standardization of framework based on service-oriented architecture (SOA)
  - Development of standard specifications (draft) for interoperability of various data derived through the learning process
  - Analysis of major unit services and application types utilized in the Mak's ODeL services and development of data interoperability measures
- ☑ Standardization of Learning Tools
  - Interoperability Development of a draft standard specification for independent interoperability between platforms and learning support tools.
  - Standard specification for interoperability of data derived from various learning tools

5.2.6 Establishing an information security system



※ Figure 5.19 Establishing an information security system

5.2.7 Strengthening the Digital Transformation

Purpose

Establish digital transformation-related organisation diagnosis and improvement plans necessary for the MAK's ODeL activation, present implementation plans to maximize the utility of the MAK's information resources, and ultimately expand the MAK members' ODeL accessibility

Diagnosis and strengthening of digital transformation organisation

a) Organisational Diagnostic Evaluation Elements

- ☑ Organisational Stability
- ☑ Management Maturity
- ☑ Process Complexity
- ☑ Combination of Operations and Strategy
- ☑ Movement of Members

b) Conducting a diagnostic assessment of the current organisation

- ☑ Entire diagnosis through structured diagnostic assessment tools (questionnaires)
- ☑ Interview with university members (professors, planning, administration, finance, facility management, IT organisation, etc.)

☑ Writing a comprehensive evaluation report

c) Scope of Mak's Digital Transformation Capacity Enhancement

☑ Planning

☑ Infrastructure

☑ Content

☑ Service

☑ Quality Management

d) GAP Analysis of Operational Organisation and Personnel

☑ Instructor

☑ Personal Instructor

☑ Operator

☑ Technical Support

e) Competency Analysis for MAK Personnel

☑ Diagnosis of the digital transformation-related organisation of the MAK

☑ Investigation and analysis of the division of work of the digital transformation organisation

☑ Investigation of basic competencies of the members of the digital transformation organisation, etc.

f) Mak-ODeL Manpower Improvement Tasks

☑ Analysis of DICTS personnel and organisation diagnosis results

☑ Establishment of short-term and long-term improvement plans to strengthen capabilities

☑ Establishment of measures to derive and secure resources required for improving the ODeL system

g) Support system for strengthening MAK's capabilities

☑ Improving the awareness of IT across the organisation

☑ Institutional perspective

☑ Financial perspective

☑ Evaluation and feedback perspective

5.2.8 Establishment of a Maintenance System

All equipment installed in the Mak ODeL Centre requires a systematic maintenance plan and maintenance organisation to ensure stable operation and future upgrades. In cases where maintenance plans and maintenance organisations are insufficient, the lifespan of installed equipment may be shortened, and repair costs may increase. Therefore, a systematic maintenance plan and a maintenance organisation with professional knowledge are necessary.

The equipment in the Mak ODeL Centre requires continuous upgrades. By regularly checking the condition of the installed equipment, the centre can prepare for the application of the latest technologies and future upgrades in educational equipment.

Since each room, such as the server room, classroom, studio, and editing room, has different equipment and uses, the maintenance plan and organisation should be tailored to its specific characteristics. Maintenance should be conducted from prevention, troubleshooting, and security perspectives. The maintenance organisation should have experts with specialized knowledge of each room's equipment. Maintenance staff should be trained to acquire the necessary knowledge and skills if they lack expertise.

※ **Table 5.14** Maintenance Plan

Maintenance Plan	Implementation plan
Preventive Maintenance	• Regularly inspect the Mak ODeL Centre equipment to identify issues in advance and take corrective actions. • The operational status of the equipment in the Mak ODeL Centre is monitored in real time, and when abnormalities are detected, immediate action is taken. • Perform regular updates of operating systems, firmware, and applications.
Corrective Maintenance	• prepare a manual in advance to respond to incidents, enabling prompt action in case of failures. • Regularly back up critical data to enable rapid recovery in a failure. • Prepare spare parts for essential equipment to enable replacement in case of a malfunction.
Security Maintenance	• Perform network and server security checks to preemptively block security vulnerabilities. • Conduct regular security training for operators to prevent incidents such as data leaks and malware infections.

※ Table 5.15 Maintenance Organisation

Maintenance organisation	Organisational structure plan
Integrated Support Team	• Responsibilities: Receives requests for issue resolution regarding equipment malfunctions from users and relays the information to the relevant maintenance team. In case of emergencies, promptly contact and respond according to the response protocol.
IT Management Team (Server room Management)	• Members: 1 server administrator, 1 network administrator, 1 security administrator • Responsibilities: Operation of server and network equipment, incident response, equipment performance monitoring, and security maintenance.
Studio Management Team	• Members: 1 video content filming and equipment operation manager, 1 network and storage manager. • Responsibilities: Responsible for the maintenance of studio equipment and support for video content production.
Lecture Room Management Team	• Members: 1 classroom equipment manager • Responsibilities: Maintains lecture room hardware and applications and supports video-recorded classes.
Maintenance organisation	• Organisational structure plan

5.2.9 Legal and Institutional Improvement

Purpose

Establish measures to improve the legal system at the Mak, local government, and national levels necessary for the operation and development of a sustainable information system and prepare measures to improve the system necessary for Mak to provide ODeL

Organisation Improvement of laws/systems

a) Strengthening the legal basis:

☑ Identifying and promoting improvement elements necessary to promote the digital transformation of the entire educational administration of universities, including academic affairs and academic management.

* Academic management rules, class management rules, faculty personnel management regulations, etc.

☑ Establish measures to improve the legal system at the Mak, local government, and national levels necessary for the operation and development of a sustainable information system and prepare measures to improve the system necessary for Mak to provide ODeL.

b) Education and research support:

- ☑ Securing a budget to support education and research through digital transformation, establishing cooperation plans between educational institutions.

c) IT Infrastructure Improvement:

- ☑ Keep your institution's networks and devices up to date and establish basic guidelines to ensure fast Internet access.

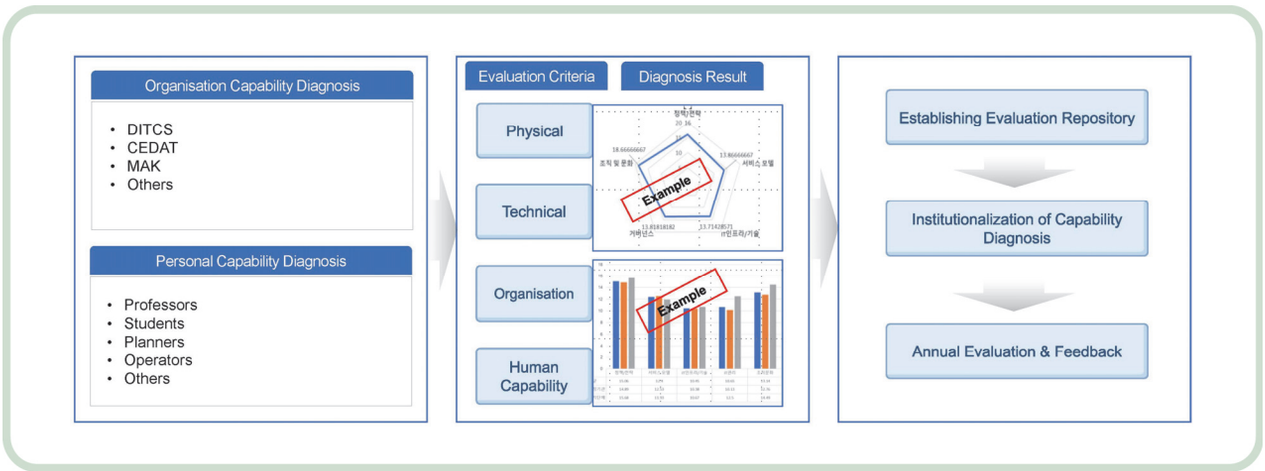
d) Establishing an information policy:

- ☑ Matters concerning establishing an information policy for each educational institution and establishing a plan to implement it effectively.

e) Establishing basic regulations for development

- ☑ Purpose: To contribute to Mak's external competitiveness and development by promoting and advancing digital transformation, including the electronification of Mak's education and administrative work
- ☑ Basic Direction: To establish a self-sufficient and sustainable development system through continuous improvement, evaluation, and feedback of Mak's digital transformation promotion plan
- ☑ Strengthening the digital transformation organisation and capacity building
- ☑ Maintaining IT infrastructure
- ☑ Developing educational digital content (including standardization)
- ☑ Quality assurance of educational digital content
- ☑ Evaluating digital transformation performance
- ☑ Securing and operating financial resources, etc.

5.2.10 Establishing an Information Level Monitoring and Feedback System



※ Figure 5.20 Establishing an Information Level Monitoring and Feedback System

5.3 Estimated Cost of Long-Term Masterplan for eLearning at Makerere University

5.3.1 Estimated cost

The estimated cost of implementing Makerere University's long-term eLearning master-plan will depend on several factors, including the scope, scale, and technology requirements. Here's a breakdown of potential costs:

※ Table 5.16 Estimate Cost Breakdown

No.	Item	Estimated Minimum cost (USD)	Estimated Maximum. Cost (USD)
1	*Infrastructure development*		
A	Learning Management System	100,000	500,000
B	Server infrastructure	200,000	1,000,000
C	Network upgrades	500,000	2,000,000
D	Digital Repository	100,000	500,000
	Subtotals	*900,000*	*4,000,000*
2	*Content Development*		
A	Course development	500,000	2,000,000
B	Multimedia production	200,000	1,000,000
C	Virtual lab development	300,000	1,500,000
	Subtotals	*1,000,000*	*4,500,000*
3	*Staff Training and Support*		

A	Training programs	200,000	500,000
B	Technical support staff	300,000	1,000,000
C	Capacity building	500,000	1,500,000
	Subtotals	***1,000,000***	***3,000,000***
4	***Student Support***		
A	Technical support	100,000	500,000
B	Digital literacy training	100,000	500,000
C	Access to devices	300,000	1,000,000
	Subtotals	***500,000***	***3,000,000***
5	***Quality Assurance and Monitoring***		
A	Quality assurance framework	50,000	100,000
B	Monitoring and evaluation	100,000	200,000
C	Accreditation and certification	50,000	200,000
	Sub total	***200,000***	***500,000***
	GRAND TOTAL	**4.600,000**	**15.000,000**

The Total Estimated Cost: is USD 4.6 million – 15 million. The actual cost may vary depending on the specific requirements and implementation strategies. Makerere University may consider phased implementation, partnerships, and grants to support the eLearning initiative.

5.3.2 Funding Options

a) Government funding: Seek support from the Government of Uganda.

b) International partnerships: Collaborate with international organisations and institutions. KOICA is already supporting the short-term phase.

c) Grants and donation: Apply for grants and solicit donations.

d) Public-Private Partnerships: Explore partnerships with private sector companies.

By investing in eLearning, Makerere University can increase access to digital resources, improve the quality of eLearning, and enhance its reputation as a leading institution in Uganda.

5.3.3 Expected Outcomes

a) Increased Access: More students will access quality education, regardless of location or socio-economic status.

b) Improved Quality: eLearning will enhance teaching, learning, and research quality, leading to better academic outcomes.

c) Innovation: Makerere University will become a hub for eLearning innovation, contributing to national and regional development.

06

Monitoring and Evaluation Plan

06

Monitoring and Evaluation Plan

The Monitoring and Evaluation plan is contained in the table below.

❋ **Table 6.1** Monitoring and Evaluation Initiative

Activities	Output	Outcome (1–5 years)	Impact (5 –10 years)
Objective 1: Advancement of the IT infrastructure for the ODeL system			
i. Build an ODeL System for MAK Students. ii. Expand the ODeL system to all students in Uganda. iii. Expand as a African leading ODeL University. iv. Utilize the ODeL system to enable students from overseas. v. Enhance ICT infrastructure. vi. Stabilize system operations. vii. Apply virtualized servers.	i. eLearning servers procured, configured and mounted. ii. Capacity of existing eLearning servers upgraded (CPU, RAM, storage). iii. Servers virtualized to fully optimize their performance. iv. Bandwidth increased from the current 5Gbps/month to 8Gbps/month by 2028.	i. Enhanced performance and access to digital learning systems and resources. ii. Increased number of students from Uganda and beyond taking eLearning courses and programs at Makerere University.	i. Internationalization of Makerere University. ii. Enhanced digital learning collaborations and scholarships.
Objective 2: Advancement of platforms such as the LMS and CMS for the ODeL system			
i. Implement load-balanced server architecture for the ODeL Learning Management System (LMS). ii. Upgrade the processing and storage capacity for the ODeL Learning Management System (LMS). iii. Integrate the ODeL Learning Management System with the University's Academic Management Information System (ACMIS) for purposes of enabling the Cyber University.	i. Load balanced server architecture implemented ii. Storage and processing capacity of ODeL Learning Management System upgraded. iii. ODeL Learning Management System integrated with the Academic Management Information System (ACMIS). iv. AI-enabled Assistive Technologies integrated with the ODeL Learning	i. Enhanced performance and access to digital learning systems and resources. ii. Increased number of students taking eLearning courses and programs at Makerere University. iii. Increased number of learners with disabilities taking eLearning courses and programs at Makerere University. iv. High quality and professionally	i. Makerere University established as a leading Cyber University in Uganda

iv. Integrate AI-enabled assistive technologies with the ODeL Learning Management System. Integrate emerging technologies such as Virtual Reality and Augmented Reality for purposes of enabling virtual experiments. v. Establish State of the Art Multimedia recording studios.	Management System. v. Emerging technologies of Virtual and Augmented Reality integrated with the ODeL Learning Management System. vi. State of the Art Multimedia recording studios installed.	developed digital learning content. v. Virtual experiments conducted for eLearning classes.	
Objective 3: Procurement and maintenance of equipment for digital transformation initiatives			
i. Propose the specifications, quantity, and scale of various equipment to be introduced through this project, excluding the ODeL system. Additionally, suggest a plan for expanding equipment input in the mid-to-long-term.	i. Specifications developed for all ICT equipment procured on KOICA project.	i. State of the art eLearning infrastructure procured, configured and installed	i. Makerere University established as a leading Cyber University in Uganda
Objective 4: Creation of digital content production environment			
i. Establish state of the art multimedia recording studios and ICT infrastructure for developing and disseminating professional eLearning content.	i. State of the art multimedia studio and ICT infrastructure for ODeL established.	i. Enhanced performance and access to digital learning systems and resources. ii. Increased number of students taking eLearning courses and programs at Makerere University.	i. Makerere University established as a leading Cyber University in Uganda
Objective 5: Establishment of a foundation for content standardization and quality management			
i. Propose a plan to improve the issues with the DDD content	i. provide metadata standardization methods,	i. Standardized online content ii. Many programmes and courses	i. Makerere's ranking continues to improve.

production guide and to develop and provide metadata standardization methods, as well as content quality management standards and methods, aimed at OSMU (One Source Multi Use) and COPE (Create Once, Publish Everywhere). This will create a foundation for securing and utilizing sustainable content.	ii. content quality management standards and methods	run on ODeL model.	ii. Internationalisation
Objective 6: Establishment of an information security system			
i. Propose action tasks based on the ISMS (Information Security Management System) standards, including physical, technical, administrative security measures to protect personal information accumulated during the operation of the ODeL system and to prevent various information security incidents such as hacking.	i. International Information Security Framework such as ISO ISO 27001 and ISO 27002 and ISACA'S NIST Cybersecurity Framework adopted and implemented	i. Enhanced security for university digital services and eLearning resources.	i. Makerere established as a trusted regional and international ODeL Cyber University in Uganda
Objective 7: Strengthening of the digital transformation organisation and capacity building			
i. Propose a diagnosis and improvement plan for the current Mak digital transformation organisation, along with a plan for continuous capacity building. Additionally, suggest elements needed to enforce this process and assign authority and	i. Implementation plan for the current Makerere University Digital Transformation Plan developed and implemented ii. Digital Transformation Risk Assessment undertaken quarterly.	i. Digital Transformation of Makerere University business processes attained.	i. Makerere University established as a leading ICT driven regional and African University.

responsibility, as well as an implementation plan.			
Objective 8: Establishment of a maintenance system for the information system			
i. Propose a plan for continuous maintenance and management, as well as the necessary organisational structure, for the hardware and software systems, application systems, equipment,studios, and other elements that will be newly established or upgraded through this project.	i. Five year ICT capacity and Maintenance Plan developed and implemented.	i. Enhanced ICT service performance.	i. Increased uptake of Makerere eLearning courses and programs.
Objective 9: Establishment of laws and regulations for promoting digital transformation			
i. Propose legal and institutional improvement plans at MaK, local government, and national levels to ensure that a sustainable informatization system can be operated and developed. In particular, identify and propose institutional reforms necessary for Mak to provide distance higher education services in Uganda.	i. Digital Transformation Policy and Roadmap for Makerere University developed and implemented.	i. Streamlined implementation of University digital transformation initiatives that include eLearning.	i. Makerere University established as a leading ICT driven regional and African University.
Objective 10: Establishment of an evaluation and feedback system for the level of digital transformation			
i. Develop and implement an evaluation and feedback mechanism for the digital transformation initiatives of Makerere University.	i. Digital Transformation Maturity Model for Higher Education initiatives developed and implemented.	i. Digital Transformation of Makerere University business processes attained	i. Makerere University established as a leading ICT driven regional and African University.

07

Communication Plan

07

Communication Plan

The Communication plan is contained in the table below.

※ **Table 7.1** Communication Plan for the Masterplan for Open Distance and eLearning at Mak

Objectives	• Inform stakeholders about the Masterplan's vision, goals, and objectives. • Build support and buy-in from stakeholders. • Provide regular updates on progress and achievements. • Address concerns and feedback from stakeholders.
Target Audience	• Students (current and prospective) • Academic staff • Administrative staff • University management • External partners and stakeholders
Communication Strategies	• Stakeholder Engagement Forums • Email Newsletters • Website Updates • Social Media • Press Releases • Internal Communication • Student Ambassadors
Main-Messages	• The Masterplan aims to enhance Open Distance and eLearning at Makerere University. • The plan will improve access, quality, and flexibility of education. • Stakeholder feedback and input are valued and integral to the plan's success.
Evaluation and Monitoring	• Track website analytics and social media engagement. • Monitor feedback and concerns from stakeholders. • Conduct regular surveys to assess stakeholder satisfaction and awareness. • Review and adjust the communication plan as needed.
Timelines	• Track website analytics and social media engagement. • Monitor feedback and concerns from stakeholders. • Conduct regular surveys to assess stakeholder satisfaction and awareness. • Review and adjust the communication plan as needed.

08

Conclusion

08

Conclusion

Makerere University's long-term Masterplan for eLearning aims to harness technology to transform education, increase access, and improve quality. By investing in infrastructure, content, staff training, and student support, the university will become a leader in eLearning, contributing to Uganda's socio-economic development.

09

References

09

References

a) Makerere University Council (2015). Makerere University policy on ODeL.

b) Makerere University Strategic Plan (2020–2030).

c) Makerere University ICT Policy Framework (2023)

d) Digital Education Standards and Guidelines for the Education and Sports sector (2021)

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