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BASELINE REPORT

e-Learning for Strengthening
Higher Education (e-SHE)
Project



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ACRONYMS AND ABBREVIATIONS

e-SHE	e-Learning for Strengthening Higher Education
DSCAP	.....	Digital Skills Country Action Plan
ECA	.....	Ethiopian Communication Authority
EMIS	.....	Education Management Information System
ERP	.....	Enterprise Resource Planning
EthERNet	.....	Ethiopian Education and Research Educational Network
FDRE	.....	Federal Democratic Republic of Ethiopia
GDP	.....	Gross Domestic Product
HEIs	.....	Higher Education Institutes
ICT	.....	Information and Communication Technology
IR	.....	Information Revolution
IT	.....	Information Technology
KPIs	.....	Key Performance Indicators
LMS	.....	Learning Management Software
MInT	.....	Ministry of Innovation and Technology
MoE	.....	Ministry of Education
PCs	.....	Personal Computers
SIS	.....	Student Information System
ToC	.....	Theory of Change
TVET	.....	Technical and Vocational Education and Training
UNESCO	.....	United Nations Educational, Scientific and Cultural Organization



EXECUTIVE SUMMARY

This baseline assessment aims to provide benchmarks for key e-SHE indicators (aligned with the national DSCAP strategies, other similar policies, e-learning dialogues and project Theory of Change along with the projects measures of success) to help gauge changes over the project life. The baseline assessment is expected to set benchmarks for e-SHE project specific indicators as outlined in the project document. It is a descriptive study with the aim of describing specific characteristics in e-learning implementation within HEIs key actors – ICT faculty, academic faculty members, leadership, and students. It is a cross-sectional study focusing on eligible respondents: Vice presidents, ICT directorates, Deans, Academic faculty, and students. A total of 39 HEIs ICT directors, 74 top management, 551 faculty members and 912 students responded to the survey between April 1 and July 14, 2023. Key findings of the study are described below:

- Enrolments of students in total is relatively below the project target;
- Only 11 (28.2%) HEIs of the total 39 reported EthERNET connectivity with significant variation by type of institutions;
- Coverage of building on WIFI and campuses on ERP and upgraded with fiber varies by HEIs type;
- 26 of the 39 (66.6%) HEIs have data centers with dedicated power line of which 12 have access to VPN;
- From the total 39 HEIs, only 10 (25.6%) of the HEIs reported the availability of a media lab. A total of 20 items were identified as a minimum requirement for the full implementation of LMS/SMS in the media lab. LCD projector and Zoom in applications are the most frequently reported item from two HEIs. Three HEIs reported all the 20 items of the medial lab;
- Majority of faculty members and students have access to most of the resources to materials useful for e-learning implementation;



- There is a potential capacity across all HEIs for e-learning among students and faculty members such as technical capacity, skills required, top management commitment, among others;
- About 48.7% (19/39) of the HEIs reported that SIS is used to report academics and students related information. However, very few HEIs (7/39, 17.9%) reported the integration of SIS and LMS;
- A total of 14 HEIs (36.0%, 14/39) reported that the HEI is engaged in e-learning content production. Likewise, 14 HEIs (36.0%, 14/39) produced at least one course on e-learning, of which 13 of them are deployed. However, only seven (50%, 7/14, of those with at least one production) HEIs reported deployment of the courses to other institutions;
- A total of 149 (27.0%) and 278 (50.5%) faculties currently have access to LMS and SIS, respectively. Of those, 135 (24.5%) faculty members have a single signing access for both;
- Of the total 912 assessed students, a total of 213 (23.3%) and 227 (24.9%) responded that they currently have access to LMS and SIS, respectively. Of those, 198 (21.7%) students have a single signing access for both;
- Result of readiness assessment for e-learning implementation among the different respondents indicated that there is a fertile ground to implement e-learning. This is including online course work expansion, technology utilization and acceptance, automation of information systems, ICT supported learning space; but improvement is needed for special needs, support on research and innovations on digital technologies, among others;
- Only seven HEIs have reported the availability of a policy or guideline to e-learning implementation. Among the seven HEIs with e-learning policy or guideline, only one reported that the policy is currently implemented to govern e-learning implementation. Some of the success mentioned to govern e-learning implantation are adequate training, availability of resources, among others. Some of the challenges in e-learning implementation are lack of clear policy guideline, incomplete infrastructure, lack of awareness, limited access to online resources,



technological challenges, top leadership enforcement, gaps in awareness creation, space limitations, among others. Supervision, monitoring plan, and implementation plans, through mentorship by e-learning coordinators and update for the top management are key activities mentioned on monitoring of e-learning policy implementation. Some additional comments to improve e-learning implementation are: Ministry of Education to reinforce HEIs to rollout e-learning implementation, regular update and meetings about e-learning implementation, infrastructures support to HEIs, access to open source software such as Moodle, etc.



I. INTRODUCTION

I.1. BACKGROUND AND OBJECTIVES

Ethiopia has developed “Digital Ethiopia 2025” as a roadmap for the country’s digital transformation initiatives. In line with this strategy, the FDRE Ministry of Education (MoE) has recently approved the Digital Skills Country Action Plan (DSCAP) for 2020-2030 (MoE 2030). The action plan shows five strategies to further the goals related to Information and Communication Technology (ICT) in the sector. These are (1) Establishing enabling policies, digital skills framework, and digital skills assessment, (2) Reform of digital skills programs, (3) Enhancing the use of technology in teaching and learning, (4) Connecting educational institutions to high-speed broadband and improving campus network digital services and (5) Capacity building and process reengineering. The national digital education strategy is framed according to this roadmap and needs to be in line with other national and institutional policies as well.

Over the years, the FDRE Ministry of Education (MoE) and the Higher Education Institutes (HEIs) have made a series of investments aimed at building connectivity and enhancing the ICT infrastructure. However, the state of digital education, notably e-learning, remains limited mainly due to the lack of appropriate policies and guidelines that not only create conducive environment for the introduction of digital education, but set standards to be met by HEIs with respect to technology use. The low penetration of e-learning has not only resulted in compromised quality, affordability, and accessibility of education but also made the sector vulnerable to external shocks. The latter was particularly pronounced during the COVID-19 pandemic when all the HEIs were closed and unable to reach their students.

Higher education expansion in Ethiopia is a recent experience, although the first university, Addis Ababa University, was established in 1950, followed by Haramaya and Gondar Universities in 1954; Jima university in 1999 and Bahir Dar university in 2000. In 2007, there were only seven public universities. They are, however, currently 50. These universities have various experiences and challenges in relation to providing quality



education and preparation of students for work. Relatively speaking, the oldest universities (first generation universities) have better infrastructure, better qualified and experienced academic staff, and other facilities to promote teaching and learning. Most of the recently established universities are behind in many ways. Thus, the investment on e-learning program creates high potential to touch lives of millions of students across about 50 universities, to ensure provision of quality education that prepares young graduates for employment and entrepreneurship.

1.2. E-SHE GOAL AND OBJECTIVES

The overall goal of e-SHE is to strengthen the higher education system through utilization of digital technology for teaching and learning and to equip youth with the skills needed for employment and entrepreneurship. The key outcome of the program is preparing young people for work in an equitable manner through an effective e-learning platform. The e-learning platform will be used to enhance and promote collaboration among universities, sharing learning resources including using experienced professors to deliver lectures and sessions via digital platform without the need to travel across the country. By doing so, equitable access to quality education can be promoted. Although this program is not designed to have direct access to jobs, it creates broader equity for quality and relevant education and enables youth to acquire relevant skills that increase their chance to transition to work. The overall of e-SHE impact is to improve and ensure that everyone has access to a high-quality, relevant higher education system. Specifically, this intervention aims at reaching the following major outcomes:

- Outcome 1. Enhanced access to digital teaching and learning platform;
- Outcome 2. Produce employable and entrepreneurial higher education graduates; and

These outcomes will be achieved through (1) providing HEI with access to a fully customized (upgraded) digital teaching and learning platform, (2) building the capacity of higher education teachers to design instructions, to develop digital content and use it in an e-learning platform. (3) Building the capacity of Information Technology (IT) support staff who can provide support to instructors and students on utilizing the e-learning



platform, (4) training students on how to use the digital learning platform, (5) building resource centers that will support the development and production of digital course contents.

e-SHE is a five-year project to complement these ongoing investments. The specific targets of the e-SHE project are:

- Establishing multimedia centers at five universities leading the cluster, which will eventually service all 50 universities.
- Using the OpenEdx Learning Management System (LMS) and Student Information System (SIS) to help Ethiopian universities offer online education.
- Training 800,000 students, 35,000 instructors, 50 instructional designers and 100 IT support staff.
- Supporting the institutionalization and scale-up of e-learning for higher education and beyond by developing and implementing suitable national policies and strategies, putting in place the necessary organizational framework, and embedding it for sustainability within the institutions.
- Fostering e-learning at universities by producing model digital course content that faculties and teachers may use as a benchmark.

I.3. PURPOSE OF THE BASELINE ASSESSMENT

This baseline assessment aims to provide benchmarks for key e-SHE indicators (aligned with the national DSCAP strategies, other similar policies, e-learning dialogues and project Theory of Change along with the projects measures of success) to help gauge changes over the project life. In addition to the standard e-SHE indicators, the baseline assessment is expected to set benchmarks for e-SHE project specific indicators as outlined in the project document.



I.4. DESK REVIEW

I.4.1. E-SHE PROJECT RATIONALE

This section describes the rationale of e-SHE as described in the objective above and also its relation to Ethiopia education policy. Ethiopia devotes more than 10% of its GDP to education, and during the past three decades, higher education has greatly grown in the country, giving rise to 50 public universities, 38 teacher-training institutions, 1640 TVET institutes, and 246 privately funded universities and colleges. A total of 1.47 million students were enrolled in higher education and training institutes during 2018 and 2019¹. However, since education is classroom-based (face-to-face) learning and digital technology has a limited role, access to high-quality education is a significant challenge. The Ethiopian Education and Research Network (EthERNet), which connects all higher education institutions to ensure the sharing of educational resources, the National Digital Academic Library, the use of video conferencing systems, smart classrooms, and the Open-sourced Learning Management System, are all examples of progressive work that has been done to build connectivity, infrastructure, and use of ICT services in training and education system. However, the use of digital technology is still very limited. The COVID-19 pandemic's outbreak and the nationwide internal conflict made it very evident how vulnerable the higher education system was. All HEIs were shut down during the pandemic and unable to communicate with their students. In order to guarantee that all students have access to high-quality education, the UNESCO (2020) survey on the impact of COVID-19 on HEIs has highlighted the urgent need for expanded ICT capability in the educational system. The Ethiopian government has adopted "Digital Ethiopia 2025-A Digital Strategy for Ethiopia Inclusive Prosperity" to direct digital-related initiatives in all sectors in response to these difficulties. This plan served as the foundation for MoE's recent approval of the Digital Skills Country Action Plan (DSCAP) (MoE 2030) for 2020–2030.

To this contribution, e-SHE in relation to ongoing initiatives funded by the Mastercard Foundation aims to be beneficial for establishing local capacity and using the LMS platform for employability and entrepreneurial skill development programmes given in

¹ <https://wenr.wes.org/2018/11/education-in-ethiopia>



the Career Centers of each university, as well as short-term skill development programmes. Additionally, e-SHE will open more chances to guarantee sustainability, increased accessibility, and scalable influence across universities. It is also consistent with the Foundation's digital technology strategy, which emphasizes developing young people's digital skills to prepare them for employment and entrepreneurship, promoting digitalization, and encouraging the use of digital platforms throughout important priority industries and the value chain.

1.4.2. E-SHE MEASURES OF SUCCESS

e-SHE project success is characterized below with a vision of “Opportunity for all to learn and prosper” and is inclusive of the impact e-SHE anticipates and Key Performance Indicators (KPIs). e-SHE seeks for an impact of “Ethiopia success story will influence regional context” through country monitoring KPIs revolving around increases access to and quality education; reduced time between education and employment; and Increased number of employment opportunities and access to finance for entrepreneurs. By the end of the five-year implementation.

The vision of "Opportunity for all to lean and prosper" and Key Performance Indicators (KPIs) are used below to describe the performance of the e-SHE initiative. The e-SHE project's goal is to further explore how project stakeholders define project success criteria using common KPIs throughout time. Through country, monitoring KPIs focused on increased access to and quality of education; decreased time between education and employment; and increased number of employment opportunities with increased access to finance for entrepreneurs, e-SHE seeks to have an impact on how "Ethiopia success story will influence regional context".

1.4.3. E-SHE THEORY OF CHANGE

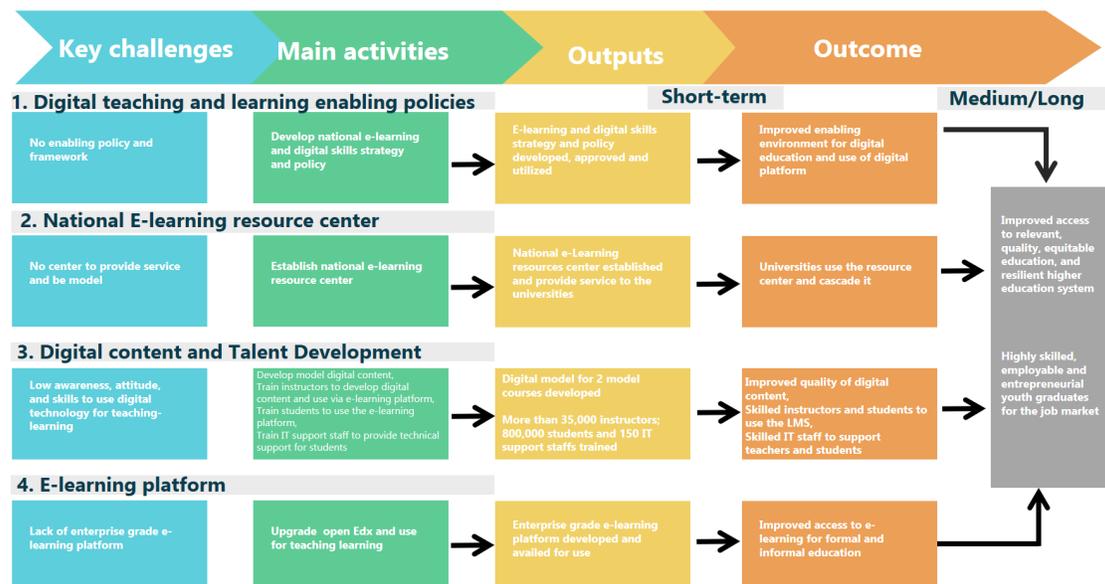
The e-SHE project's Theory of Change (ToC) is shown below. It describes the change's trajectory and expected outcomes. Simply expressed, the TOC outlines the main reasons for implementing e-learning, the major hurdles that must be overcome, the identified problem that must be changed, and the relationship between the problems and the primary activities, short-term outputs, medium-term outputs, and long-term



outcomes of the project. The theory of change goes on to explain that e-SHE's inputs and actions will produce measurable effects that together will bring about the desired improvements: 1) Increased access to higher education that is relevant, of high quality, equitable, and resilient; and 2) Highly qualified, employable, and entrepreneurial young graduates for the labour market. The diagram clearly outlines the major issues in each of the four major domains and shows the best way to get the desired results for e-SHE. It will also be useful for guiding and modifying implementations as needed and gaining a better understanding of what works and doesn't (pause and reflect sessions for course corrections) as they proceed.

Figure 1.2: e-SHE Theory of Change

THEORY OF CHANGE



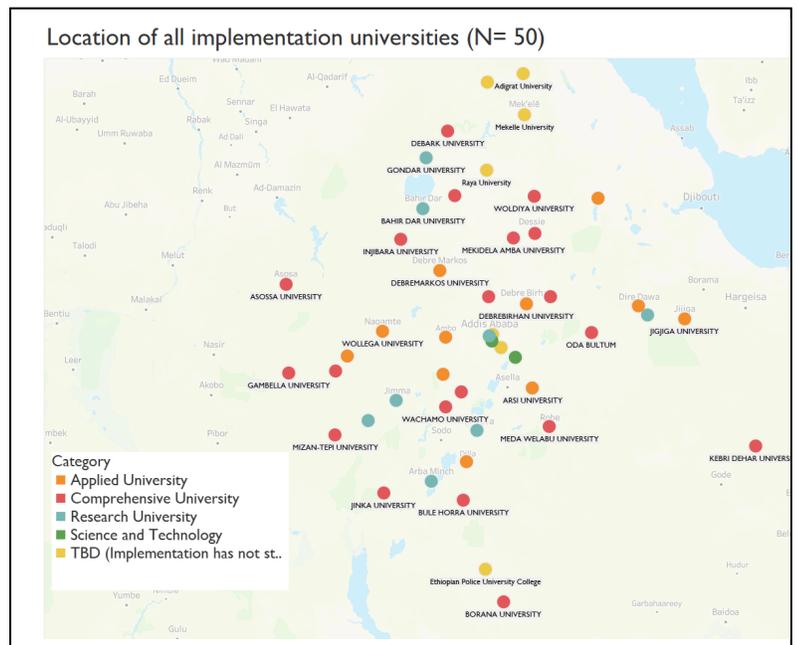


II. BASELINE METHODOLOGY

2.1. STUDY SCOPE – TARGET POPULATION / GEOGRAPHY

Over the course of the five-year initiative, e-SHE is anticipated to be operational in fifty public HEIs in Ethiopia. The HEIs are divided into applied, comprehensive, research, and science and technology categories. Few universities (four universities in Tigray region, and four universities that do not directly report to the MoE) are omitted from the baseline assessment due to difficulties to access them, bringing the sample frame down to 42 HEIs. Universities from each category are included in the sample.

Figure 2.1: HEIs location map



2.2. STUDY DESIGN (SAMPLING AND STUDY COMPONENTS)

This baseline study is designed to be a descriptive study. Specific characteristics in e-learning that have implementations on the implementation of the program across the HEIs, are described. The key actors within each institution – the leadership, ICT faculty, academic faculty members, and students participated in the study. It is a cross-sectional study.

Sample size was determined for two domains: students and faculty members. In addition, two leadership tools (i.e., one for academic vice presidents and another for deans), and one ICT directorate tool were administered across all participant universities.



In order to choose statistically significant sample sizes, we have reviewed key indicators from Education Management Information System (EMIS) and other secondary datasets. Due to completeness of the data both in content and timing, the study team opted for optimum sample size with in each HEI. Hence, the study used the below statistical formula to determine how big a sample should be for students and faculty members.

$$n_o = \frac{\left(\frac{z_{\alpha}}{2}\right)^2 * p(1-p)}{\delta^2}$$

[Where $\alpha = 0.05 = \text{level of significant (Type 1 error)}$; $\delta^2 = 0.05$ is the margin of error; $p=0.5$ proportion of respondents (students/faculty) for optimum sample; and z-score of 1.96 confidence level of 95%].

This sample size is adjusted using a final population correction considering a total population of 800,000 students and 35,000 faculty members. Hence, a total of 385 students and 379 faculty members are sufficient to get representative sample size. For convenience, we estimated 400 students and faculty members to be included in the study. To get a representative sample size from each institution, a minimum of 25-30 respondents should be obtained. This is about 16 HEIs to be included in the study if the study opt to select HEIs with the first assumptions.

The five lead universities are purposively included hence additional 11 universities were proposed to be randomly selected but by category. However, after further consultation with ICT directorate of Ministry of Education, it was decided to reach to all HEIs maintaining the smallest sample size requirement by each HEIs. Moreover, due to the interest to include gender, department, mode of study (regular, extension, distance, etc), and expectation of high attrition the team increased the sample size to 40 by each HEI. Below is a table describing estimated sample size and coverage of the study (Table I).



Table 1: Target respondents for the baseline assessment

HEIs	ICT directorate	Dean	Vice President	Students	Faculty
42	42	42	42	1680	1680
Of the national 50 HEIs, 42 are accessible.	One ICT directorate response from each HEIs.	At least one Academic dean response from each HEI.	One academic vice president response from each HEI.	At least 40 students from each HEI.	At least 40 faculty from each HEI.

Conceptualization

For the purpose of executing the baseline study, the theory of change is used as the main conceptualization tool. Within this framework, the datapoints that are needed to be tracked against the progresses to be made as a result of program implementation, to gauge side effects (or unintended results) of the program implementation, and to identify areas of concern to be flagged to partners were determined with the help of the data gathering tools. Details of these are described hereunder.

1. **National eLearning policy development:** The anticipated result of this intervention is improved eLearning environment for digital education and use of digital platforms. Under this theme, the existence of an enabling policy framework to implement eLearning in HEIs, and the existence of institutional strategies, plans, procedures, directives, etc. to implement eLearning or to sustain existing practices were assessed. Leadership tool, ICT tool and faculty tool capture components of this theme.
2. **eLearning resource centres:** Establishing resource centers (or facilities) that support the production of digital course contents that will be utilized through the eLearning platform, and showcasing the best use of the centers to help HEIs replicate in their own context is the other critical area of intervention. The anticipated outcomes are therefore, to (1) utilization of the established resource centers by universities (both host and catchment universities) and cascading the establishment of additional resource centers in other universities (i.e., catchment universities). These results require an assessment of the current state of target



- universities with respect to owning and running such facilities and identifying gaps if there are any. The ICT tool richly addresses data requirements of this theme.
3. **Talent development:** The purpose of this theme is to prepare instructors, students and IT support staff for the utilization of the eLearning technology and enhancement of quality of education. This is the result of an improved quality of digital content, skilled instructors in developing digital course content and delivering digital courses, skilled students in using the platform, and skilled IT support staff to provide services to instructors and students. The level of skills required to develop content, to deliver online courses, to learn digitally, and to administer digital platforms and provide support services for users are key data attributes that are captured by the leadership, faculty, and student tools mainly.
 4. **eLearning platform:** Under this theme, upgrading (customizing) an eLearning platform to fit the requirements of target universities and providing these universities a sustainable access to the customized platform so they will utilize the platform for formal and informal education. The utilization capability of each university is a function of whether the university has prior experience using an eLearning platform, whether the university has a plan to go digital as a strategy to enhance quality of education, the university's possession of required hardware and network infrastructure, and the motivation and competence level of staff. This dimension also indicates the readiness of each university to implement eLearning. The ICT tool, the leadership tool, the faculty tool and the student tool (i.e., all tools) have data points that address requirements in this regard.
 5. **Readiness:** This is an overarching theme that captures issues that have effects on the effectiveness and efficiency of program implementation. Key attributes include possession of key resources (e.g., computers, computer labs, resource centres/media labs, data centres), the quality of network infrastructure, the skill of staff and students, and cultural and strategic readiness. These issues are addressed under the general background characteristics section of this report.



2.3. RESEARCH INSTRUMENTS

2.3.1. TOOLS DEVELOPMENT

Ensuring the research instrument informs the project's baseline has been considered when constructing the research instruments. The context and goals of the e-SHE influenced the choice of content. The development of the instruments was guided by the project work plan, implementation activities, theory of change, and log frame in addition to the many subject topics outlined in the various targets. Before creating the tools, the project team first suggested a list of indicators for each target. The indicators were found to indicate inputs, outputs, processes, and outcomes. Finally, alternative tools for adjusting to the five dimensions of e-SHE were discovered through a desk review. A last component considered to make sure the questions flowed, as well as ethical issues, whether the instrument adhered to certain protocols, and the tools that were available.

2.3.2. PRETESTING OF TOOLS AND VALIDATION

After creating the digital versions of the questionnaires, the research teams went through several iterations of the tools to check for completeness, validity, range of values, and skip patterns. The purpose of the validation was to make sure that the questionnaires could collect all of the necessary data, and additional adjustments were made in light of the results.

2.4. DATA COLLECTION PROCEDURES/STEPS

To help with data collection, baseline survey teams were identified and targeted at each HEI's ICT directors and e-learning coordinators mainly as facilitators. In close cooperation with the Ministry of Education's ICT Directorate, the e-SHE team mapped all of the 42 HEIs' ICT Directorates' contacts, then administered requests about their availability during the study period and obtained their consent to participate. An online training was conducted regarding the study's goal, various tools, the LIME database, methodology, and deliverables for each HEI, among other topics. To enhance the reporting and data quality of the baseline assessment, contacts were also shared for



regular communications. Teams from e-SHE worked out the logistics requirements based on workload for each of the HEIs.

Data was collected through an online platform between April 1 and July 14, 2023. The study team regularly reviewed reporting rate of the each HEIs and each tool and provided feedback to the facilitators about reporting rate on a daily base. The study team also reviewed and reported key performance indicators to inform progress of the assessment.

2.5. ASSESSMENT TOOLS

2.5.1. DESCRIPTION OF TOOLS

Four different tools were utilized, as previously mentioned, depending on the respondents. Below is a brief description of each of the tools administered. The assessment tools are annexed below (annex 6.1).

ICT Director tool

ICT directors from each HEIs answered the questions on this survey. The key topics covered by this tool are background data on each HEI, including its infrastructure, staffing, connectivity, e-learning implementation including policy, and student enrollment.

Leadership tool

The survey's questions were addressed by the Academic vice president and a dean in each HEI. The main subjects covered by this tool include institutional plans and policies connected to improvements and expansions for the use of e-learning. This tool's goal was to evaluate institutional technological and e-learning readiness and goals from the viewpoint of leaders.

Faculty tool

The survey's questions were addressed by sampled faculty (i.e., instructors/teachers) of each HEI. The main subjects covered by this tool include e-learning and digital skills assessment, access to resources for e-learning implementation, exposures to SIS and LMS, and readiness to implement e-learning, among others. This tool's goal is to assess technological and e-learning readiness from the viewpoint of faculty members.



Student tool

The survey's questions were addressed by sampled students of each HEI. The main subjects covered by this tool include e-learning and digital skills assessment, access to resources for e-learning implementation, exposures to SIS and LMS, and readiness to implement e-learning, among others. This tool's goal is to assess technological and e-learning readiness and goals from the viewpoint of students.

2.5.2. ESTABLISHED LIST OF INDICATORS

As described above, e-SHE team firstly enlisted potential key performance indicators to develop tools. The indicators were derived from the project document, theory of change and log frame. At least 29 indicators disaggregated for each target were derived to inform the project success. The list of the indicators is annexed at the end of the report.

2.6. DATA MANAGEMENT AND PROCESSING

The data management activity started concurrently with the data collection with facilitators checking data quality based on their respective checklists before submission. The data was submitted through a central server (survey.ethernet.edu.et) and synchronized up on submission. Four separate databases for each of the tools were established online considering quality checks during completion such as range checks, skip checks, consistency checks, etc. A dedicated data manager and M&E consultant conducted spot checks of submitted data for completeness and legacy of flow. Intermediate analysis, as part of data cleaning, was conducted in STATA, to inform reporting rate and key performance indicators. An appropriate daily data backup system was worked out so that each submitted data is saved offline as well. The data manager and M&E consultant also made daily-automated backups in external hard drives. Final data analysis was conducted in STATA and Tableau.



III. PRESENTATION OF FINDINGS

This section of the report summarizes key findings of the baseline study beginning from general background characteristics which contains respondents' profile of each tool, and institutional profile; then focusing on the specific areas of program intervention as per the e-SHE Theory of Change, and finally assessing the overall readiness of target universities to implement eLearning. Related thematic areas are merged for simplicity of presentation. Qualitative data analysis results are augmented to the quantitative ones to triangulate the findings.

3.1 GENERAL BACKGROUND CHARACTERISTICS

To help understand the context in which this program is implemented, and who the respondents are, respondents' profile and institutional profiles are presented under this section. The respondents are categorized as respondents for (1) ICT tool which is administered on ICT directors of each university, (2) the leadership tool which encompasses academic vice presidents and at least one dean, (3) faculty tool which targets instructors or teachers working for target universities, and (4) student tool which targets students at the implementing universities. The institutional profile addresses the general institutional environmental attributes that have implications for the implementation of the program in the target universities. Specifically, the nature of the staff and student population in universities, the status of basic infrastructure and resources that are required for the deployment and operation of the eLearning platform, and the condition of staff and student access to these resources and infrastructure are presented.

3.1.1 RESPONDENTS PROFILE

A total of 39 HEIs' ICT directorates responded to the ICT tool. A total 29 institutions (69%, 29/42) responded to the leadership tool. A total of 51 deans and 19 vice-presidents reported to the leadership tool, providing a total sample size of 70. Only five (3 vice deans and 2 academic vice presidents) were females. The average age of the respondents is 36.6 years (ranging between 23 and 55, median of 35 years). Majority's



(93%; 69/74) educational qualification is above MA/MSc; with MA/MSc (33, 44%) and with a PhD (36, 48.6%). Total years of experience of respondents is on average 14 years (ranging from 2-34 years, median of 12 years), while years of experience in the current institution is about 9 years (ranging from three months to 31 years, median of 9 years).

A total of 551 responses were extracted from the online database of faculty members by July 14, 2023; of these respondents, 14.5% (80) are women and the rest are men (85.5%, 471). The average age of faculty members is about 34 years (male 34 years and women 31.6 years) ranging between 22 and 68 years of age. Three-fourth of the faculty members (75.7%, 417/551) have at least second degree (MA/MSc), followed by PhD (15.4%, 85/551), and the rest have a first degree (8.9%, 49/551). Of the total PhD holders (85), seventy-six of them are men (89.4%). A similar pattern is observed in the two remaining education categories. Average total year of experience is 9.5 years, ranging between 0 and 37 years. Men have more experience as compared to women (9.9 years versus 7.5 years). The survey was administered evenly from social and natural science departments revolving around information systems, computer science, business and economics, accounting and finance, health science, educational planning and management, English language and literatures, history and heritage management, Biology, physics, chemistry, law, engineering, among others.

Finally, a total of 912 students' responses were extracted from the online database by July 14, 2023. About of 27% (245/912) are girls and the rest are boys (72.7%, 663/912); with 4 records missing sex. The average age of students is about 24 years (men 24.5 years and women 23.5 years) ranging between 18 and 77 years of age. Fourth years students account for 34.5% (315) of the respondents, followed by third year (23.1%, 211), second year (12.9%, 118), fifth year (7.6%, 67), freshman (5.7%, 52), sixth year students (3.0%, 27), and with 114 students did not report about the year of enrollment. About 74.8% (682) students are in-campus regular students and the remaining are from extension in-campus students (6.7%, 61), from extension off-campus (4.3%, 39) and undergraduate regulars off campus (1.5%, 14) with 116 (12.7%) students not reporting on the enrollments.



3.1.2 HIGHER EDUCATION INSTITUTIONS PROFILE

Staff and Student Population and Access to Connectivity

Based on the responses from all the respondents, this section will present key indicators useful for HEIs status including staffing, enrolment, connectivity and infrastructures of

The table summarizes key background characteristics of the HEIs that are useful for e-learning implementation. From

Table 3.1: Background information of HEIs - Staffing, Academic programs, Student enrolment and EtherNET connectivity
(Data Source: ICT director, N=39)

Number of Staffs	
Academic staffs	43,480
Administrative staffs	70,737
Number of Programs	
Graduate programs (PhD)	258
Graduate programs (MA, MSc, LL.M, etc)	1,070
Undergraduate academic programs	1,249
Student Enrolment	
Regular	99,159
Extension	43,333
Summer	63,949
Distance	562
ETHERNET connectivity	
Number of HEIs connected	11
EthERNET connected students	8,042
EthERNET connected faculty	2,041
Number of research institutions affiliated with the HEI	407
Number of HEIs reported	39

these 39 HEIs, a total of 43,480 academic staffs were recorded. The number of administrative staff is higher than the number academic staffs (total of 70, 737). During this Fiscal year, a total of 99,159 regular; 43,333 extension; 63,949 summer and 532 distance educations students were enrolled. There are three categories of Academic programs reported: undergraduate (B.Sc. or B.A.), graduate program- second degree (M.Sc. or M.A.) and third-degree graduate program (Ph.D.). A total of 258 PhD graduate programs; 1070 MA/MSC graduate programs; and 1249 is reported from the 39 HEIs.

One of the strategies in the national Digital Skills Country Action Plan for Ethiopian HIE and TVET Institutions is to connect Higher Education and TVET institutions to affordable high-speed broadband and ensure existence of modern campus networks infrastructure and services. As shown in the table 3.1 of the 39 (11/39, 28.2%) of the HEIs reported that they are connected to EthERNET with 407 institutions are affiliated to those connected HEIs. The total number of EthERNET connected students and faculty staffs are reported to be 8,042 and 2041, respectively (at least they have a user access). Analysis of the result by the different type of institutions shows that there is variation of



connectivity by lead versus satellite HEIs (with satellite institutions with more coverage of students and faculty members due to the fact that we only have 5 lead institutions). Overall, HEIs are categorized applied (n=11); comprehensive (n=17); research (n=9); and science and technology (n=2). A total of 11 HEIs are categorized as applied universities, and among those 4 (36.3%) HEIs are connected to EthERNet. Only five HEIs from the 17 comprehensive HEIs is reported to be connected to EthERNet. Only one of the 9 research institutions are connected to EthERNet. Of the total 2 science and technology institutes, only one is reported to be connected to EthERNet, but with significant coverage for students (n=1500) and faculty (n=1000).

Only half of the campuses in the applied (14.5%; 7/48) and comprehensive (48.0%; 12/25) universities are reported to be on ERP. However, 65.9% (29/44) campuses in the research universities are reported to be on ERP. None of the campuses in the science and technology institutions is on ERP (0%; 0/14). The coverage of Gbps connectivity for buildings in the university shows that science and technology have a strong coverage; followed by research universities, applied universities and comprehensive universities. The coverage of WIFI in the academic areas follows the same pattern. A similar presentation of connectivity but by the university lead is presented in Figure 3.2. Overall, there are 5 leading universities, and the remaining are categorized as others/satellite. Surprisingly, one of the lead HEIs is connected to EthERNet during baseline data collection, while 29.0% (10/34) of the satellite institutions are connected to EthERNet connecting students. This is very critical gap for the implementation of e-learning between lead and satellite universities. Thirty-four HEIs are reported to be affiliated to the five lead institutions; and 373 institutions are affiliated to the 34 satellite institutions. About 70% (84.6%; 28/40) of the campuses in the five lead universities are upgraded with fiber while the figure in the satellite institutions is relatively lower (45.0%; 41/91). The same pattern is observed for campuses on ERP (lead universities; 62.5%, 25/40; and satellite institutions 25.3%, 23/91). The proportion of buildings with Gbps connectivity is 76.2% (895/1175) and 53.0% (1354/2550) among the lead and satellite institutions, respectively. However, the proportion is academic areas covered with WIFI is higher among the lead universities as compared to satellite lead institutions (46.5%, 356/764 versus 43.3%, 505/1167) (Figure 3.1 and 3.2). Twenty-six of the institutions



have data centers with a dedicated power line of which 12 of them have access to VPN. Overall, majority of the available PCs in the institutions are functional and connected either to WIFI or a VPN (Data not shown).

Figure 3.1: Background information of HEIs by category - EtherNET connectivity (Data Source: ICT director, N=39)

	Applied University (n=11)	Comprehensive University (n=17)	Research University (n=9)	Science and Technology (n=2)
EthERNET connectivity				
Number of HEIs connected	4	5	1	1
EthERNET connected students	1,650	4,842	50	1,500
EthERNET connected faculty	1,002	26	13	1,000
Number of research institutions affiliated with the HEI	18	104	277	8
Campuses information				
Total number of campuses	48	25	44	14
Total number of campuses with upgraded fiber	11	23	33	2
Total number of campuses under the university on ERP	7	12	29	0
Buildings				
Number of buildings under the university	656	1,477	1,466	126
Number of buildings under the university with Gbps connectivity	354	702	1,099	94
Academic areas				
Number of academic areas under the university	260	867	732	72
Number of academic areas under the university with Wi-Fi cover..	138	273	391	59

Figure 3.2: Background information of HEIs by lead versus others- EtherNET connectivity (Data Source: ICT director, N=39)

	Lead Universities (n=5)	Other Universities (n=34)
EthERNET connectivity		
Number of HEIs connected	1	10
EthERNET connected students	50	7,992
EthERNET connected faculty	13	2,028
Number of research institutions affiliated with the HEI	34	373
Campuses information		
Total number of campuses	40	91
Total number of campuses with upgraded fiber	28	41
Total number of campuses under the university on ERP	25	23
Buildings		
Number of buildings under the university	1,175	2,550
Number of buildings under the university with Gbps connectivity	895	1,354
Academic areas		
Number of academic areas under the university	764	1,167
Number of academic areas under the university with Wi-Fi cover..	356	505

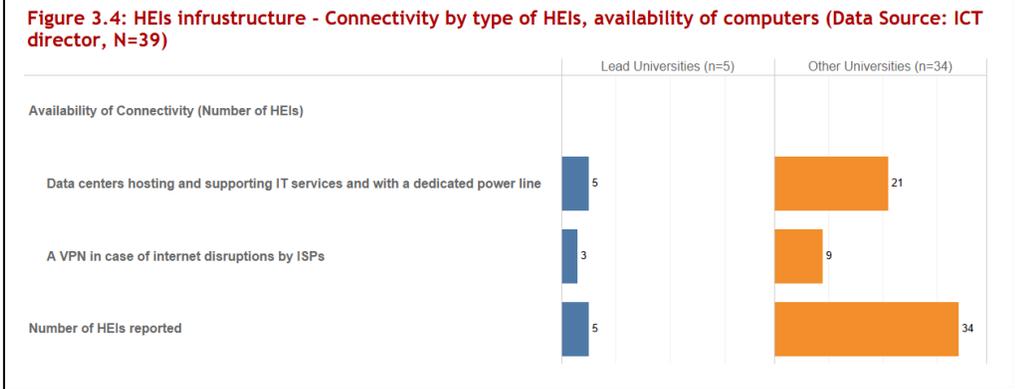
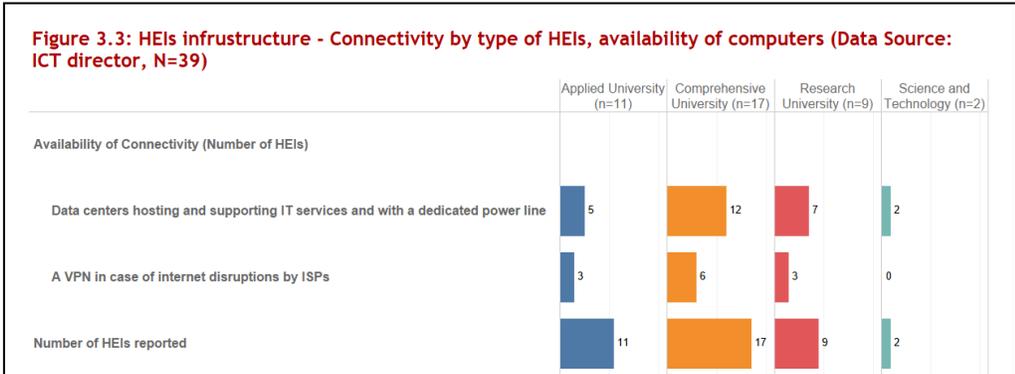


Resources and Infrastructure – HEIs

This section presents key infrastructure questions that are assessed and critical importance for e-learning implementation. Those items revolve around data centers,

access to alternative internet connections such as VPN and available PCs in different departments and connectivity.

Twenty-six of the institutions have a data center with a dedicated power line of which 12 of them have access to VPN. Overall, majority of the available PCs in the institutions are functional and



connected either to WIFI or a VPN (Data not shown). Figures 3.3 and 3.4 shows presents the availability of data centers and VPN by the different type of HEIs. Overall, the proportion of HEIs reporting availability of data centers is 100% in the two science and technology institutes, 77.8% (7/9) in the research institutes, 45.5% (5/11) in the applied institutes and 70.5% (12/17) among the comprehensive institutes. Likewise, of the five lead institutes all (100%) and three (60%) have reported availability of a data center and access to VPN while the figure for the satellite institutions is 61.7% (21/34) and 26.4% (9/34), respectively.



Media Lab

Universities provide a variety of academic needs for teachers and students around the world by providing access to information resources. The construction of a digital media lab in universities is essential given the influx of developing technologies into the educational system, which have increased need for multimedia resources for student learning enrichment, innovation, and development. In general, a digital media

Table 3.6: Media lab : Establishment, Resources Available by number of HEIs (Data Source: ICT director, N=39)

Resources available in the HEIs with media lab	
Number of HEIs having a computer with a large hard drive	6
Number of HEIs having usable servers	6
Number of HEIs having a monitor	6
Number of HEIs having scanner	4
Number of HEIs having a printer	4
Number of HEIs having a desktop transfer protocol	3
Number of HEIs having a video Camera	6
Number of HEIs having a Microphone	6
Number of HEIs having strong Internet connection	6
Number of HEIs having a trained staff on e-learning course development/process	5
Number of HEIs with feasible location for the media lab	5
Number of HEIs having a computer with adequate space meeting minium standards	4
Number of HEIs having power supply (generators, solar, etc)	6
Number of HEIs having smart UPSs	5
Number of HEIs having Zoom/Other applications	7
Number of HEIs having dedicated server	6
Number of HEIs having smart classroom with control unit and studio together	5
Number of HEIs having smart classroom with interior design	6
Number of HEIs having LCD	7
Number of HEIs having FM radio	3

lab or studio is a space with a range of tools and resources for people to work together, learn from one another, and share information.

The 39 HEIs were evaluated for the presence of media labs or studios or any established resource center PLUS resource accessibility for LMS and SIS implementation. From the total 39 HEIs, only 10 (25.6%) of the HEIs reported the availability of a media lab. Three of the HEIs are from applied universities; three are comprehensive, three from research institutions, and the remaining one is a science and technology. One of the lead institutions reported the existence of a media lab, and the remaining nine are from the satellite institutions. Ownership about the media lab lacks clarity. There is no specific department accountable to own the media lab. A total of 20 items were identified as a minimum requirement for the full implementation of LMS/SMS in the media lab. LCD projector and Zoom in applications are the most frequently reported item from two HEIs (Table 3.6). Three HEIs reported all the 20 items of the medial lab. On average the media/labs or resource centers are accessible for about 10 hours per week.



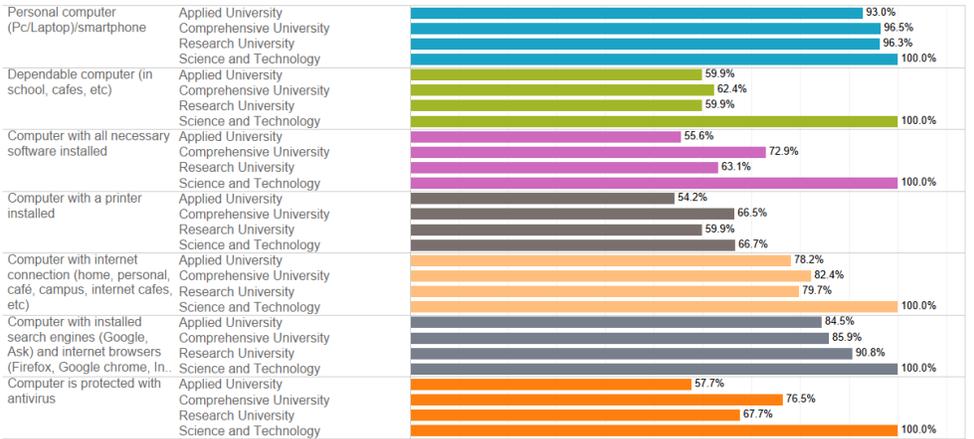
Faculty Access to resources

Access to resources very relevant to e-learning implementation is presented in table 3.2. A majority of the faculty members reported access to any form of personal device (95.4%, 526/551) followed by available internet connection (80.1%, 445/551), and 87.8% (484/551) have responded that the computers are installed

Table 3.2: Access to technological resources (Data source: Baseline faculty, N= 551)

Personal computer (Pc/Laptop)/smartphone	526
Dependable computer (in school, cafes, etc)	337
Computer with all necessary software installed	355
Computer with a printer installed	335
Computer with internet connection (home, personal, café, campus, internet c..	445
Computer with installed search engines (Google, Ask) and internet browsers..	484
Computer is protected with antivirus	374
Number of Faculties	551

Figure 3.5: Percentage of faculties with access to technological resources (Data source: Baseline, N= 551)



with internet engines and browsers. About 67.8% (374/551) of faculty members' computer is protected with antivirus, and 64.4% (355/551) of the respondents computer have all the necessary software's installed. According to Figure 3.5, faculty members from the science and technology institutions scored better in accessing the resources listed as compared to the other institutions. Faculty members from the research institutions scored better in accessing computers installed with search engines. Faculty members from the comprehensive institutions stand third in accessing necessary materials, while applied institution scored the least. Analysis of staffs access to e-learning resources by lead and satellite universities shows that the lead institutions faculty scored relatively better (Data not shown).



Student access to resources

Students' access to resources for e-learning implementation is presented in table 3.3. A majority of the students reported access to any form of personal device including smartphones (84.4%, 770/912) followed by computers with installed engines (78.0%, 712/912), computer with protected antivirus (76.3%, 696/912), access to computers with internet connection (72.3%, 660/912), access to computer in the school or café (70.6%, 644/912), computer with all necessary software installed (69.2%, 631/912), and computer with printer installed (57.6%, 525/912).

Table 3.3: Access to technological resources (Data source: Baseline student, N= 912)

Personal computer (Pc/Laptop)/smartphone	770
Dependable computer (in school, cafes, etc)	644
Computer with all necessary software installed	631
Computer with a printer installed	525
Computer with internet connection (home, personal, café, campus, internet cafes, etc)	660
Computer with installed search engines (Google, Ask) and internet browsers (Firefox, Google chrome, Internet Explorer, Microsoft Edge, etc)	712
Computer is protected with antivirus	696
Number of Students	912



According to Figure 3.6, students from the science and technology institutions scored better in all the access questions (except PCs installed with search engines, computers with internet connection) as compared to the other institutions. Unlike the other responses, students from the applied universities have better scored in

Figure 3.6: Access to technological resources (Data source: Baseline student, N= 912)

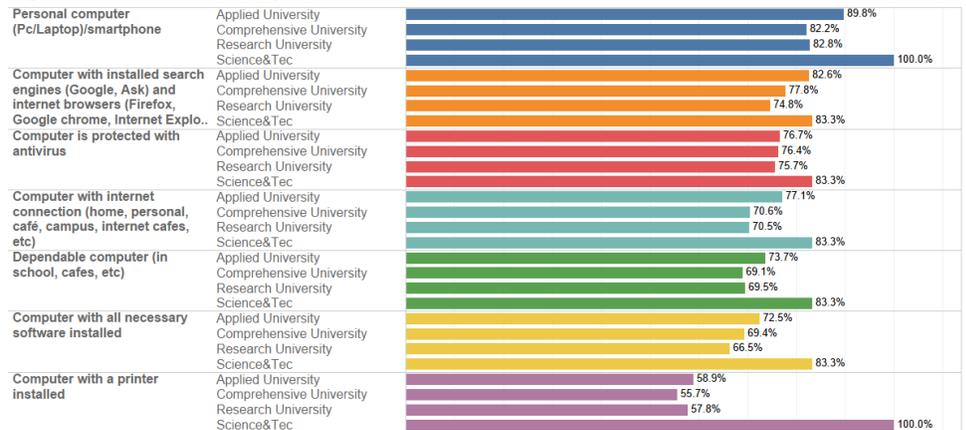


Figure 3.7: Access to technological resources (Data source: Baseline student, N= 912)



computers with search engine (82.6%). Analysis of students' access to e-learning resources by lead and satellite universities shows that the lead institutions faculty scored relatively better scored (except having access to dependable computer and access to software's) (Figure 3.7). Result of the same analysis shows that freshman and second year students have better access to resources; and extension students scored better as compared to regular students (Data not shown).



3.2 eLearning Implementation in Higher Education Institutions

Regardless of the curriculum, computer-assisted e-learning has evolved into an essential, fundamental component of teaching anatomy. The quick uptake of personal mobile computers by students has encouraged the creation of online teaching materials that support more pervasive, "learn anywhere" methodologies. This section of the report discusses key eLearning implementation issues that are aligned to the e-SHE theory of change.

Analysis of eLearning policy and relative legislative frameworks, institutional eLearning policies and strategies, assessment of staff capacity to use IT and experience to develop or utilize digital content and to teach online; students' capacity and experience to learn online, availability of resource centers or media facilities to develop digital courses, and institutional experience of using learning management and student information systems are covered under this section.

3.2.1. E-Learning Policies

Implementing eLearning in an educational institution, especially in publicly owned one, requires a favorable policy environment. Therefore, analysis of policy and legislative gaps at national and institutional levels and addressing them is a key move towards implementation of eLearning. This implies that there is a connection between organizational change, eLearning policy, and its implementation. Additionally, eLearning strategies are increasingly being incorporated into organizations' change management plans.

Among the 39 HEIs, seven HEIs have reported the availability of a policy or guideline to eLearning implementation. Among the seven HEIs with eLearning policy or guideline, only one reported that the policy is currently implemented to govern eLearning implementation. Some of the success mentioned to govern eLearning implantation are adequate training and availability of resources, among others. Some of the challenges in eLearning implementation are clear policy guideline is not available – some are in draft stage, lack accountability, and there are many gaps in the draft document, incomplete infrastructure, lack of awareness, limited access to online resources, technological challenges, top leadership enforcement, gaps in awareness creation, space limitations,



among others. Supervision, monitoring plan, and implementation plans, through mentorship by eLearning coordinators and update for the top management are key activities mentioned on monitoring of eLearning policy implementation. Some additional comments to improve e-learning implementation were Ministry of Education to reinforce HEIs to rollout e-learning implementation, regular update and meetings about e-learning implementation, infrastructures support to HEIs, access to open-source software such as Moodle, etc.

3.2.2 Staff Technical Capacity and Digital course content development experience

This section presents the preparedness of the academic staffs for the introduction of e-learning at the selected higher institutions. The baseline skills assessment tool is structured into four sections dealing with basics of computer skills, internet/online skills, software application skills, and skills gained due to past training. The proportion of staff who are skillful in saving and opening of documents is 98.5% (543/551), followed by

basic functions of computers and hardware's (86.9%, 479/551). Technical skills in troubleshooting is one of the basic skills scoring very low (72.2%, 398/551). Almost all faculty members are skillful in sending emails with attachments (98.7%, 544/551) followed by browsing of web (94.0%,

Table 3.4: Skill assessment (Data source: Baseline faculty, N= 551)

BASIC COMPUTER SKILLS	
Basic functions of computer hardware components (CPU and monitor) including its peripherals like printers, speaker, and mouse	479
Save/Open documents to/from	543
Software installation, changing and configuration settings on a computer (date, time, layouts, regular backups, etc)	458
Know how troubleshoot or have access to technical support in case of problems	398
INTERNET/ONLINE SKILLS	
Send email with file attachments	544
Familiar with online etiquette	429
Know how to surf internet and web navigation	437
Using web browsers (eg. internet explorer, google chrome, etc) confidently	518
Know resolving errors during web surfing (e.g. page cannot be found, connection timeout)	379
Comfortable in searches such as bookmarking and downloading files	481
Access to online library and other resource database	407
Use social platforms (Telegram, WhatsApp, etc)	523
Use meeting links (Zoom calls, google meet, Microsoft meet, etc)	470
SOFTWARE APPLICATION SKILLS	
I know what PDF files are and I can download and view them	544
I am comfortable with word processing and use it comfortably	530
I am able to have several applications opened at the same time and move between them	491
I know how to use spreadsheet application (Ms-Excel)	460
Have support staffs on e-learning course production and implementation	309
TRAINING	
I have prior training on e-learning	232
I have attended online classes	309
I have prior training on master class trainees (foundation on excellence in teaching online)	185
I have prior training on fundamental digital skills (fundamentals of ICT) in rapid skilling program	211
I have used a Learning Management System (LMS) before	225
I have used a Student Information System (SIS) before	367
I have the skills to modify and add content and assessment using an online learning management system	266
I have attended seminars/workshops related to online learning activities	301
Engaged in e-learning course production process (Training and production)	217
Number of Faculties	551

518/551). Only 68.8% (379/551) knows how to solve errors during web surfing. More than 90% of faculty members are skillful in either word processing or accessing pdf files. About 89% (491/551) faculty members know how to use several applications at the



same time or between them. Likewise, 83.4% (460/551) of the faculty members are skillful in using spreadsheet applications. About half of the respondents (56.1%, 309/551) have a support staff on e-learning production and implementation. A total of 367 (66.6%) respondents used SIS before, and 309 (56.0%) attended online classes on e-learning followed by 217 (39.0%) respondents engaged in e-learning course production and process. There is no substantial difference on e-learning skills by the different categories of institution (*Data not shown*).

3.2.3 STUDENT TECHNICAL CAPACITY

This section presents the preparedness of students for the introduction of e-learning at the selected higher institutions. The students' baseline skills assessment tool is also

structured in to four sections (i.e., basics of computer skills, internet/online skills, software application skills and skills gained due to past training). The proportion of students who are skillful in saving and opening documents is 91.3% (833/912), followed by basic functions of computers and hardware's (80.6%, 735/912). About 71.9%

Table 3.5: Skill Assessment (Data source: Baseline student, N= 912)

BASIC COMPUTER SKILLS	
Basic functions of computer hardware components (CPU and monitor) including its peripherals like printers, speaker, and mouse	735
Save/Open documents to/from	833
Software installation, changing and configuration settings on a computer (date, time, layouts, regular backups, etc)	656
Know how troubleshoot or have access to technical support in case of problems	590
INTERNET/ONLINE SKILLS	
Send email with file attachments	793
Familiar with online etiquette	670
Know how to surf internet and web navigation	668
Using web browsers (eg. internet explorer, google chrome, etc) confidently	780
Know resolving errors during web surfing (e.g. page cannot be found, connection time out)	582
Comfortable in searches such as bookmarking and downloading files	765
Access to online library and other resource database	676
Use social platforms (Telegram, WhatsApp, etc)	835
Use meeting links (Zoom calls, google meet, Microsoft meet, etc)	592
SOFTWARE APPLICATION SKILLS	
I know what PDF files are and I can download and view them	843
I am comfortable with word processing and use it comfortably	734
I am able to have several applications opened at the same time and move between them	697
I know how to use spreadsheet application	650
TRAINING	
I have prior training on e-learning	516
I have attended online classes	523
I have used a Learning Management System (LMS) before	511
I have used a Student Information System (SIS) before	568
I have the skills to modify and add content and assessment using an online learning management system	503
I have attended seminars/workshops related to online learning activities	481
Engaged in e-learning course production process (Training and production)	464
I have prior training on selected digital skills courses in rapid skilling program	475
I have prior training on fundamental digital skills (fundamentals of ICT) in rapid skilling program	507
Number of Students	912

68% (656/912) students reported that they have fundamental skills on software installation and configuration of settings². Technical skills in troubleshooting are one of the basic skills among students with a very low score (64.7%, 590/912). More than 80%

² This is not training related to software developments but experiences in the past in installing any software.



of the students reported they are able to send emails with attachments (86.9%, 793/912), skillful in using web browsers (85.5%, 780/912), use bookmarks and search engines (83.9%, 765/912), and use social platforms (91.6%, 835/912). Skills related to internet and web navigation (73.2%, 668/912), resolving errors during web surfing (63.8%, 582/912), access to online library and research databases (74.1%, 676/912), and use of meeting links (64.9%, 592/912), observed to be low among students.



More than 92.4% of students (843/912) are skillful in accessing pdf files. About 80.5% (734/912) of students are familiar in word processing. Also 76.4% (697/912) of the students know how to use several applications at the same time or between different applications. Likewise, 71.3% (650/912) of the students are skillful in

using spreadsheet application. Exposure related to training is quite low for most of the indicators. The proportion of students with exposure in the utilization of SIS in the past is 62.3% (568/912), and prior training on e-learning is 56.6% (516/912). More than half of the students reported that they have attended online class (57.3%, 523/912) and trained on fundamentals of ICT in rapid skilling program (55.6%, 507/912). Very low scores are reported in relation to exposure to LMS (56.0%, 511/912), online learning activities (57.3%, 523/912), course production training (50.9%, 464/912), and selected digital skills in rapid skilling program (52.1%, 475/912). Analysis of skills by the different institutions is presented in Figure 3.8. As shown in the figure, students from the applied institution scored better in the basic computer skills, followed by students from the research institutions. Overall, students from the science and technology institutes scored better only in troubleshooting (83.0%). Students from the science and technology institutes have poor performance in using social platforms. Again, students from applied

Figure 3.8: Skill Assessment (Data source: Baseline student, N= 912)





universities reported better scores for the skills related to internet and online categories (e.g., email communications, 89%; use of social platforms, 94%). There is a similar distribution of scores related to internet and online skills among students from the research and comprehensive universities. Students from the applied universities scored better scores in word processing and use of multiple application. The figure also shows that students from the science and technology have better exposure to training followed by students from research institutes and applied institutes.

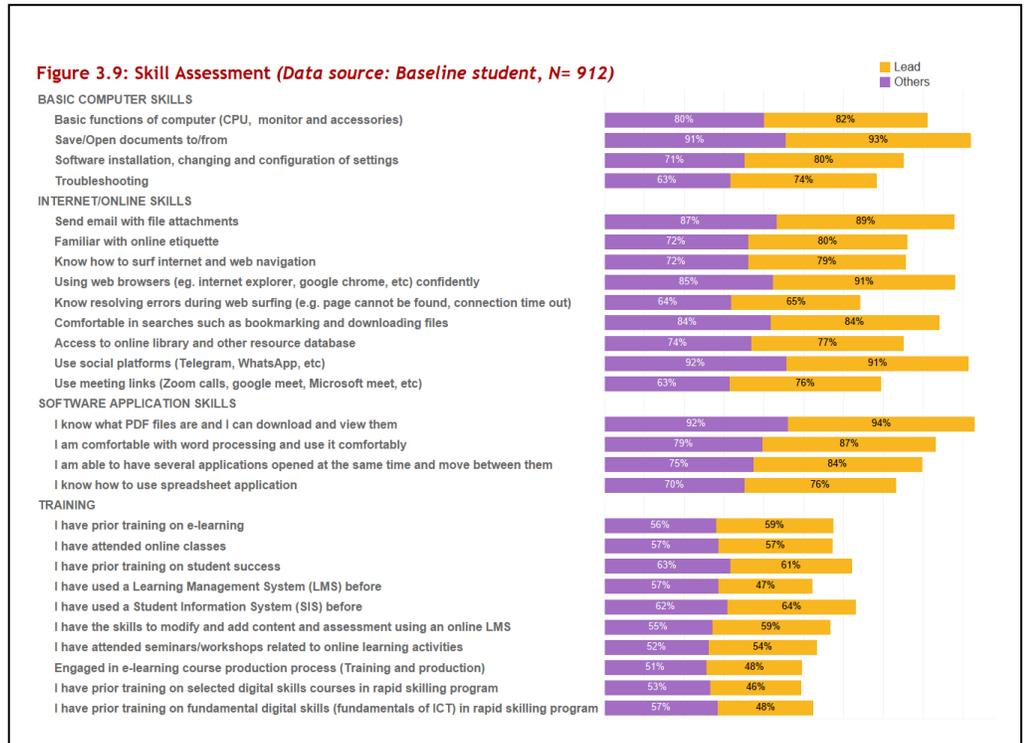


Figure 3.9 presents analysis of students' skills basing on lead and satellite universities. Students in the lead university reported better scores as compared to satellite universities for the basic computer skills. Similarly, students in the lead university reported better scores as compared to satellite universities for the skills related to internet and online use. The same is true for skills related to software applications, (i.e., students in the lead institutions scored better). However, students in the lead institutions scored low for some of the indicators in the training domain: prior training on student success, prior experience on LMS, exposure to e-learning production process, and participation in fundamentals of ICT through rapid skilling program. Figure 3.10 presents analysis of students' skills basing on students year of enrollment. The figure depicts as year increases the exposure to most of the skills is better. However, students in Year I (i.e., freshman) have reported comparable or even better scores as



compared to other students except few trainings related questions. Freshman students are more familiar in utilization of zoom in links (77%), followed by second year students (66%), fifth and fourth year students (each 60%). About 9 out of 10 reported the use of social platforms except second- and fifth-year students. Across all the years of enrollment, few students are observed to access online library and resource database, and the level of skills in troubleshooting errors during web surfing. Exposure to LMS is higher among students in freshman, second year and fifth year (each 52%). Likewise, exposure to SIS is higher among freshman and fourth year (60% and 59%, respectively) followed by fifth year students (58%) and second year students (55%).

Figure 3.10: Skill Assessment (Data source: Baseline student, N= 912)

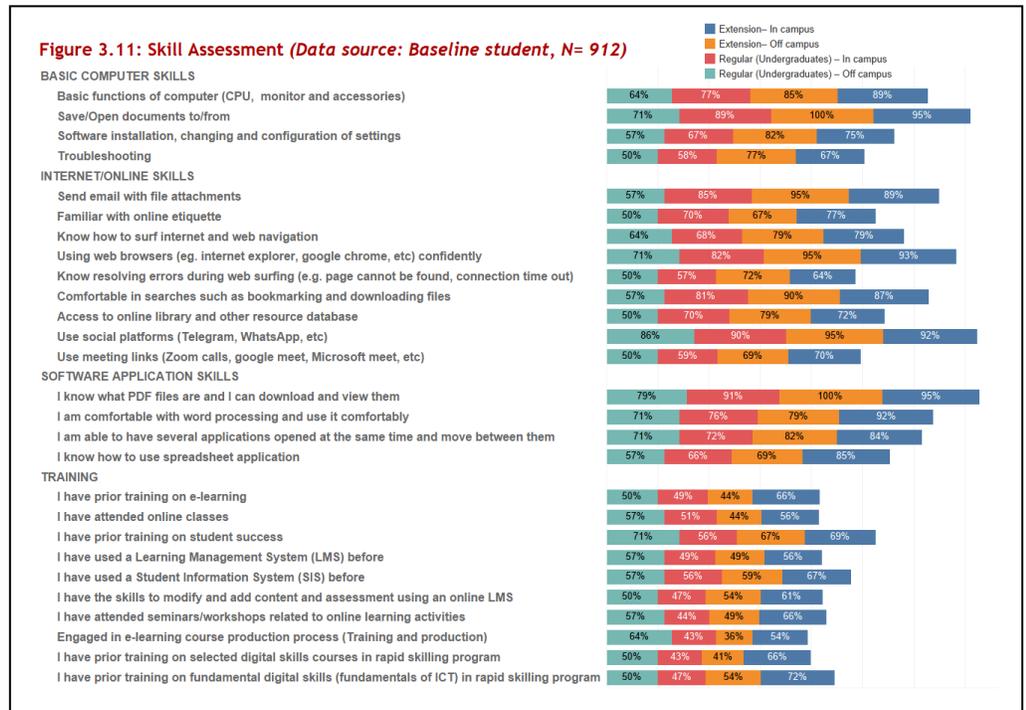




Figure 3.11 presents results of skills assessment by student enrollment – regular, extension, and in and off campus. Across all the skills undergraduate off campus students scored low. Off campus extension students scored better than in campus regular students for basic

computer skills. The analysis also shows that there is a good potential of e-learning implementation among extension in and off campus students. Exposure to LMS is more skewed to regular off campus and exposure to SIS is more skewed to extension in campus

students. About ¾ (72%) of in campus extension students are trained on fundamentals of ICT in rapid skilling program.





3.2.4 LMS AND SIS USE EXPERIENCE

This section's goal is to map out a variety of issues that could affect how successfully e-SHE initiatives will be carried out. About 48.7% (19/39) of the HEIs reported that SIS is used to report academics and students related information. However, very few HEIs (7/39, 17.9%) reported the integration of SIS and LMS. Eight institutions reported (20.5%, 8/39) that a team of 2-4 e-learning coordinators are currently assigned by e-SHE project.

Only three institution reported that media lab focal persons are incentivized for e-learning implementation. A total of 14 HEIs (36.0%, 14/39) reported that the HEI is engaged in e-learning content production. Likewise, 14 HEIs (36.0%, 14/39) produced at least one course on e-learning, of which 13 of them are deployed.

However, only seven (50%, 7/14, of those with at least one production) HEIs reported deployment of the courses to other institutions. Moreover, 14 HEIs (36.0%, 14/39) support their staffs on e-learning implementation; and about 17.9% (7/39) of the support other institutions on e-learning implementation.

Among those Nine HEIs, a total of 182 different courses were produced to date, of which all of them are deployed. However, the proportion of e-learning courses fully functional is 62.1% (113/182). Seven HEIs reported access to a functional e-learning platform. Table 3.8 reports in-depth analysis of findings based upon direct opinions from ICT directors and perspectives of e-learning paradigm – success and challenges of implementations.



Findings indicate several successes to e-learning challenges that includes learning styles and flexible plus effective learning (20/39, 51.3%), learning achievement, and equipment capabilities, student satisfaction, easy accessibility (19/39, 48.7%) and technological roles (18/39, 46.2%). Completeness of infrastructure and peer support are reported as success parameters in 17 and 16 HEIs, respectively. Family support is the least reported success parameter. Below is a radar chart presentation of success parameters of e-learning implementation by the different categories of HEIs. As shown in the chart, comprehensive

Table 3.7: e-Learning Implementation (Data Source: ICT director, N=39)

LMS and SIS implementation	
Number of HEIs reporting academics and students related information from SIS	19
Number of HEIs with integrated SIS and LMS	7
Number of HEIs with assigned e-learning coordinators (team of 2-4) initiated by e-SHE project	8
Number of HEIs with media lab focal persons incentivized	3
Number of HEIs engaged in e-learning production (at least one curriculum on e-learning platform LMS/SIS)	14
Number of HEIs reporting course production e-learning workflow ...	
Produced at least one course on e-learning	14
Deployed courses	13
Deployed to other catchment universities	5
Supported staffs on e-learning implementation	14
Supported other institutions on e-learning implementation	7
e-learning course prooduction, deplyment and functionality ...	
Number of e-learning courses produced to date	182
Number of e-learning courses deployed to date	182
Number of e-learning courses fully functional	113
Number of HEIs with access to a functional enterprise grade e-learning platform	7
Number of HEIs reported	39

institutions have scored more success parameters followed by science and technology,



research institutes and applied institutes. With in the range of 0-60%, comprehensive research HEIs reported technological roles, flexible and effective learning, equipment capabilities, learning achievement and learning styles are the most frequent success parameters. Family support is the least reported success parameters within the comprehensive and

science and technology institutes. Reported success parameters substantially vary among research institutions. The figure below also shows reported success parameters for e-learning implementation by lead and other satellite universities. Again, the lead universities reported low number of success parameters as compared to other satellite universities. Below is a

Table 3.8: Opinions of e-Learning Implementation success and challenges (Data Source: ICT director, N=39)

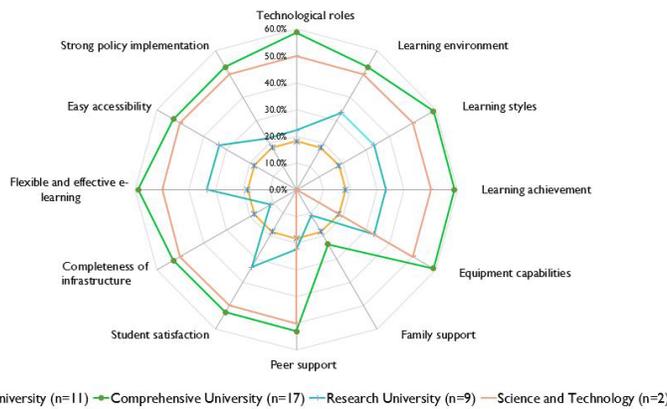
Number of HEIs reporting parameters/reasons of e-learning successful implementation	
Technological roles	18
Learning environment	19
Learning styles	20
Learning achievement	19
Equipment capabilities	19
Family support	9
Peer support	16
Student satisfaction	19
Completeness of infrastructure	17
Flexible and effective e-learning	20
Easy accessibility	19
Strong policy implementation	17
Number of HEIs reporting parameters/reasons of e-learning implementation failure	
Lack of technology and skills	18
Lack of digital literacy	18
Lack of teaching quality	16
Lack of interaction	18
Lack of resources	20
Lack of self-efficacy	17
Number of HEIs reported	39



radar chart presentation of failure parameters of e-learning implementation by the different categories of HEIs. As shown in the chart comprehensive institutions again have scored more failure parameters followed by science and technology (with significant variation), research institutes and applied institutes. With in the range of 0-80%, comprehensive research HEIs reported lack of resources. Lack of self-efficacy, lack of technology related skills, lack of digital library and lack of teaching quality. The figure

Figure 3.12: E-learning success paramerts

e-learning implementation success parameters



e-learning implementation success parameters

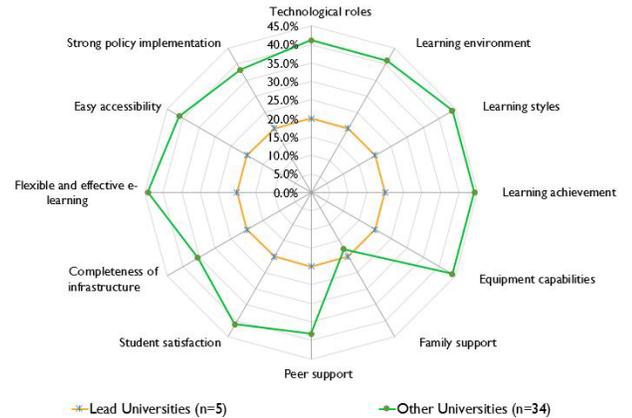
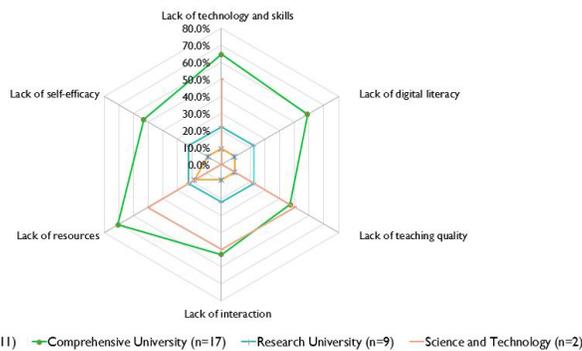
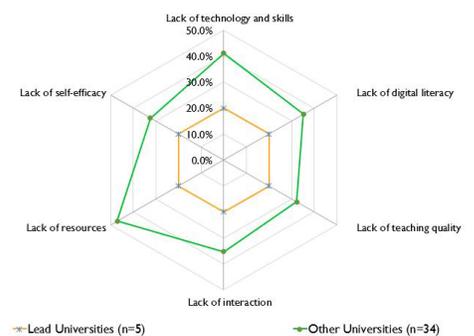


Figure 3.13: E-learning Failure paramerts

e-learning implementation failure parameters



e-learning implementation failure parameters



below also shows reported failure parameters for e-learning implementation by lead and other satellite universities. Again, the lead universities reported low number of success parameters as compared to other satellite universities.

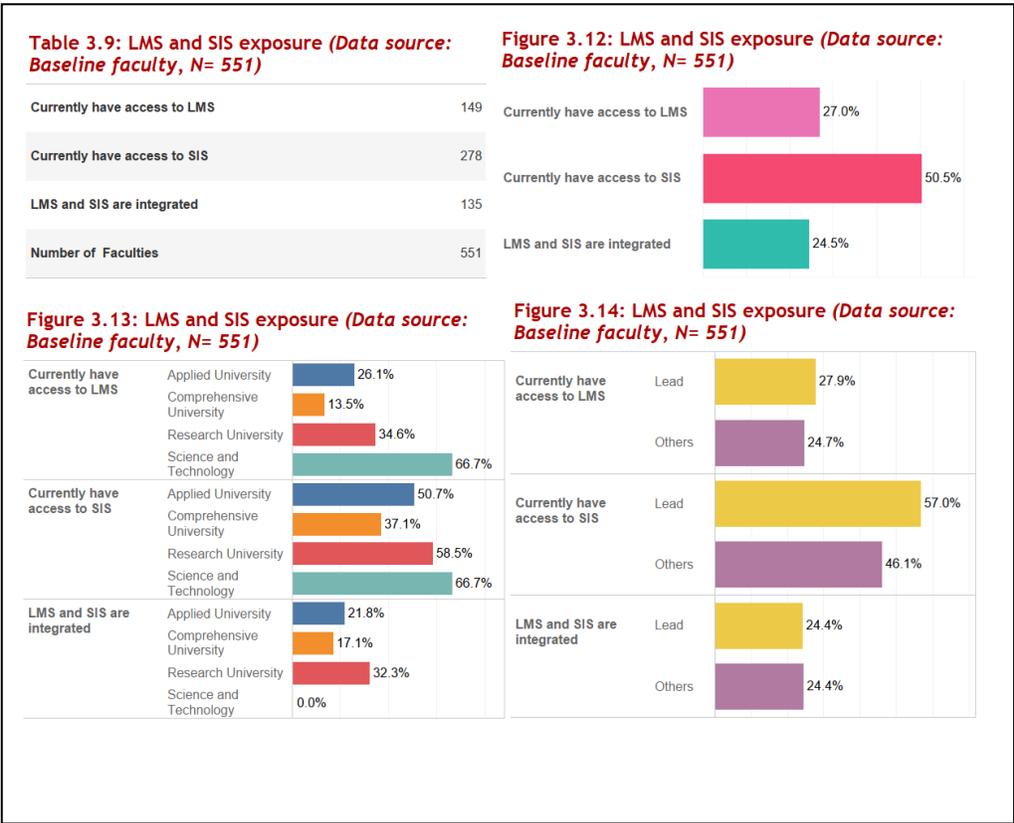


Faculty LMS and SIS Utilization/Experience

Learning management systems (LMSs) are increasingly being used by academic institutions as a component of their educational management system to enhance the teaching and learning process in higher education. Additionally, the Student Information System (SIS) offers a user-friendly interface for updating student data. It can be used by colleges or educational institutions to easily maintain student records.

Such solutions were entirely reliant on the information and communication technology (ICT) infrastructure already in place and on computer technology. LMS integration with SIS, sometimes known as (LMS-SIS), is a system that saves time and effort by creating accounts automatically, reducing

defects and errors, and enhancing productivity and quality. This section describes how faculty members use the LMS and SIS and evaluates accomplishments, obstacles and areas of improvement. As shown in Table 3.9, a total of 149 (27.0%) and 278 (50.5%) respondents currently have access to LMS and SIS, respectively. Of those, 135 (24.5%) faculty members have a single signing access for both. Figure 3.13 shows that faculties from Science and technology institutes have relatively better exposure to LMS and SIS, but in both institutions LMS and SIS are not integrated. Faculty members from the research institutions rank second in both accessing LMS and SIS and the institutes also integrated LMS and SIS (32.3%). Integration of LMS and SIS is relatively better in applied





universities (21.8%) as compared to comprehensive universities (17.1%). Access to both LMS (27.9%) and SIS (57.0%) is better among the lead universities as compared to satellite universities; however, integration is the same (24.4%). Faculty members reported that LMS and SIS facilitated communications with the students and sharing facilitates, avoids cheating during exams, increase precisions of grading, reduces time to correct papers, improves feedback loops, increased transparency, improved security since it is paper free, and overall improved staffs efficiency and documentation. Areas of improvement revolve around automation to sign with a single user and password, simplification, capacity building for staffs and students, awareness creation among students, expanding to communities, expanding to accept range of different files type (such as video and audio), storage capacity, centralized database and information management, relationship between departments, improvement on power supply and internet speed, platforms for communications such as messaging, among others.



Students LMS and SIS Utilization/Experience

Learning management systems (LMSs) coupled with Student Information System (SIS) are increasingly being used by academic institutions as a component of their educational management system to enhance the teaching and learning process in higher education. Both can be used by colleges or educational institutions to easily maintain student records, and students to review their records and build regular communications. This section describes how students use the LMS and SIS and evaluates accomplishments, obstacles and areas of improvement.

As shown in Table 3.11, of the total 912 assessed students, a total of 213 (23.3%) and 227 (24.9%) responded that they currently have access to LMS and SIS, respectively. Of those, 198 (21.7%) students have a single signing access for both. Figure 3.26 shows that students from research institutions have relatively better exposure to both LMS and SIS, single user for both is relatively low. Students from the research institutions follow to rank second in both accessing LMS and SIS using a single user (25.2%). Access to both LMS (14.0%), SIS (19.4%) and single user (11.6%) is lower among the lead universities as compared to satellite universities (Figure 3.17). Students reported that LMS and SIS facilitated accessing, improved quality of education, interfaces are intuitive and interactive, and self-

paced plus personalized learning path, ease of communication, among others. Areas of improvement revolve around automation to sign with a single user and password, simplification, trainings, awareness creation among students, expanding through social

Table 3.10: LMS and SIS exposure (Data source: Baseline student, N= 912)

Currently have access to LMS	213
Currently have access to SIS	227
LMS and SIS are integrated	198
Number of Students	912

Figure 3.15: LMS and SIS exposure (Data source: Baseline student, N= 912)



Figure 3.16: LMS and SIS exposure (Data source: Baseline student, N= 912)

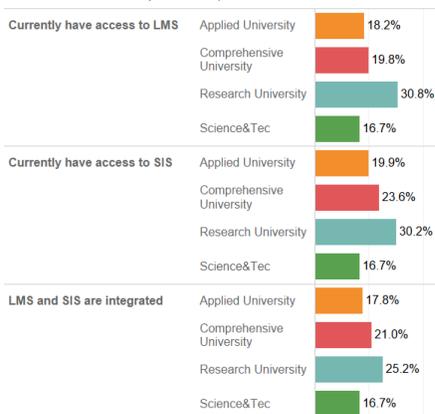


Figure 3.17: LMS and SIS exposure (Data source: Baseline student, N= 912)





medias such as Telegram, expanding the service outside of the university, written communications such as messaging, connection speed, among others.

3.3. Readiness of HEIs to Implement eLearning

Readiness to implement e-learning is recognized as one the most critical aspects for successfully achieving implementation of e-learning programs in higher education institutions. Institutional readiness can be manifested by the institution's strategies and plans containing eLearning as one of the immediate moves towards organizational transformation, Leadership's preparedness to sponsor the change, staff and student capability and motivation, and the availability of basic resources and infrastructure.

3.3.1 Institutional Plan

From this perspective, the plans of each HEIs to expand and improve effective and efficient implementation of E-learning is assessed. Questions revolve around institutions' plan to expand and improve online course, plans to improve the use of technology, plan to implement unified automation information system, among others. These sets of questions were open ended. Thematic analysis was used to extract the major findings from the qualitative data corps.

- Institution plan to expand online course shows that there is a scattered implementation of LMS in different formats with little infrastructure investments to date. HEIs are closely working with partners for capacity building, promotions of e-learning through advocacy activities, procurement of e-learning and data center materials, and expansion of the existing online courses. Moreover, HEIs have reported planning to strengthen the ICT directorate through technology, improve laboratories and media labs, and most importantly development and implementation of e-learning policy. Most importantly, the establishment of smart classrooms, capacity building for staffs, automation of students records, resource mapping, paper free learning approaches, and the use of alternative approaches for LMS such as MOODLE are some of the commonly mentions plans by the HEIs.
- Technological advancements is very key plan mentioned by the HEIs. For instance, unified automated information system to optimize data feeding,



integration of records such as HR information systems, Library management, improvement of digital library, and research management is one of the technological approach mentioned by the HEIs.

- The HEIs also reported that the technological advancements also lacks some of the needs of the special needs; hence the HEIs planned to meet those needs through fulfilling minimum requirements of the different resources centers and digital library, improve the availability of VDIs and smart rooms conducive for special needs, avail jaws software, printing materials for Braille services, among others.
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special needs, avail jaws software, printing materials for Braille services, among others.

3.3.2 Awareness, Skills, and Access

Awareness about the importance and need to implement eLearning backed by the requisite skills to utilize the technology and access to the technology are among the key indicators of readiness. Besides, the involvement and commitment of top management is critical. To gain insight into the status of HEIs regarding these indicators, additional items were included in the tools. The results from the leadership and faculty tools are presented here.

3.3.2.1 Leadership Response

Additional eLearning readiness questions were administered to ensure institutions are

capable of using the eLearning technology in the best way possible. The core of the questionnaire is set of items related to factors that affect the success of eLearning. The tool measures readiness of the institutes towards technology, awareness, and top management



involvement and commitment. Respondents were asked to use a Likert's scale from 1-5, to respond to the different questions. The results show that awareness is higher on basic skills to use internet (score 4.596) followed by skills related to computers (score 4.365) and intentions to use e-learning in the future (score 4.327), among others. Likewise, technological readiness is higher encouraging culture to use new technologies (score 3.654), adequate access to internet (score 3.635), and internet speed (score 3.577), among others. The average score of readiness among the top management

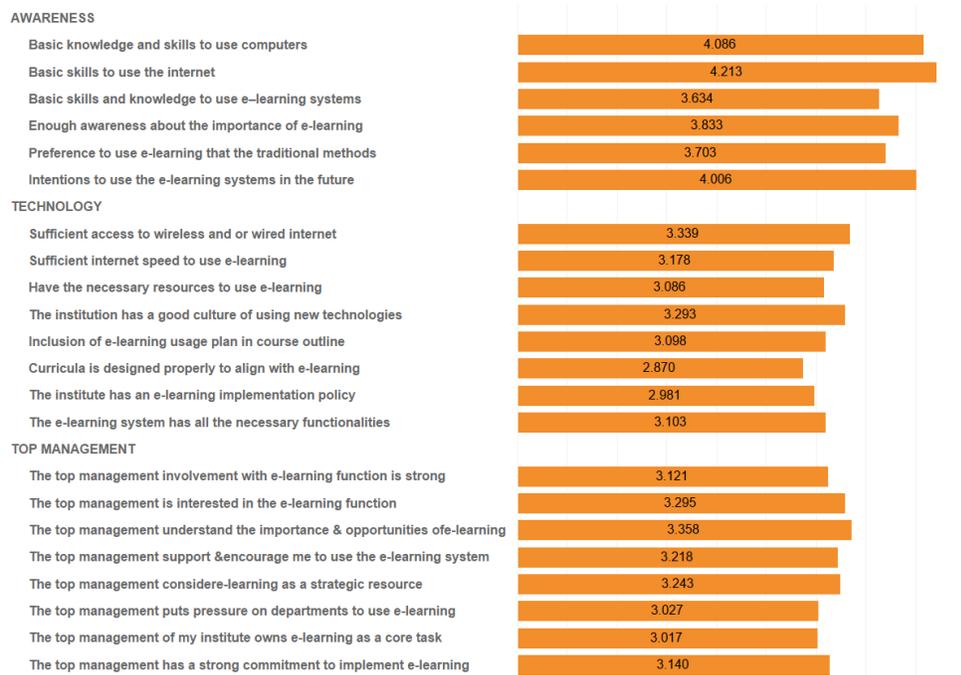


follows awareness as reported by both deans and academic vice presidents. The management is reported to be interested in full functionality of e-learning (score 4.019) followed by the understanding of the importance of e-learning (score 3.962). Low score in the management category revolves around ownership (score 3.519) and accountability by the different departments and active engagement (score 3.481). Major areas of improvements are implementation of e-learning policy (2.731), curriculums alignment with e-learning (2.808), and inclusion of e-learning usage plan in course outlines (3.192) (Figure 3.5). Twelve of the total 39 completed HEIs tools reported that staffs implementing e-learning are incentivized. The modalities of incentives are: based on credit hours and financial rules of the university, extra work payments such as weekends, and funding their projects.

3.3.2.2 Staff Readiness

Like the leadership tool, additional e-learning readiness questions were administered to faculty members to ensure staffs perspective about

Figure 3.19: Readiness to implement e-learning (Data source: Baseline faculty, N= 551)





institutions capability on the use of eLearning technology in the best way possible. Again, the core of the questionnaire is set to issues related to factors that affect the success of e-learning. The tool measures the readiness of the institutes towards technology, awareness, and top management. Respondents were asked to use a Likert's scale from 1-5, to respond to the different questions. Figure 3.19 presents results of readiness parameters used in the survey for faculty members. The average score of readiness is higher among the awareness categories. Faculty members reported higher scores for basic skills to use internet (4.213) followed by basic skills to use computers (4.086), and future intentions to use e-learning (4.006). Unlike the leadership results, the top management and technological awareness reported low score as compared to awareness from the perspective of faculty members. Figures 3.20 and 3.21, also shows the scores distribution of faculty members by the categories of HEIs. As shown in figure 3.20 science and technology scored better in awareness and technology scores, while research and applies institutions scored better in the top management score. Comprehensive institutions scored the least in all the skills assessment. Awareness is quite higher in the lead institutions faculty members. Likewise, lead institutions scored better in most of the scores in the technology categories (except the culture of using new technologies, inclusion of e-learning plans in course outline, and design of curriculums to align with e-learning).

Figure 3.20: Readiness to implement e-learning (Data source: Baseline faculty, N= 551)



Figure 3.21: Readiness to implement e-learning (Data source: Baseline faculty, N= 551)





Overall, the readiness of HEIs to implement eLearning, if supported by e-SHE, is at a satisfactory level at least to the extent that HEIs have basic infrastructure and resources, staff and students have access to end-user devices, have basic skills at least to be able to access the basic skills courses that are parts of the program, and the current level of connectivity can serve as a starting point for the HEIs and the students to take time and plan future investments that enable them to be in a better position as the program fully rolls out.



V. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The goal of this baseline is to provide benchmarks for key e-SHE indicators to help gauge changes over the project life. In addition to the standard e-SHE indicators, the baseline assessment defined the benchmarks for e-SHE project specific indicators. It is a descriptive study with the aim of describing specific characteristics in e-learning implementation with in HEIs key actors – ICT faculty, academic faculty members, leadership, and students. It is a cross-sectional study focusing on eligible respondents: ICT directorates, Deans and Vice president, Academic faculty, and students. A total of 39 HEIs ICT directors, 74 top management, 551 faculty members and 912 students responded to the survey between April 1 and July 14, 2023. Key findings of the study are described below:

- Only 11 (28.2%) HEIs of the total 39 reported EthERNET connectivity with significant variation by type of institutions;
- 26 of the 39 (66.6%) HEIs have data centers with dedicated power line of which 12 have access to VPN;
- From the total 39 HEIs, only 10 (25.6%) of the HEIs reported the availability of a media lab. A total of 20 items were identified as a minimum requirement for the full implementation of LMS/SMS in the media lab. LCD projector and Zoom in applications are the most frequently reported item from two HEIs. Three HEIs reported all the 20 items of the medial lab;
- Majority of faculty members and students have access to most of the resources that are useful for e-learning implementation;
- There is a potential capacity across all HEIs for e-learning among students and faculty members such as technical capacity, skills required, top management commitment, among others;
- About 48.7% (19/39) of the HEIs reported that SIS is used to report academics and students related information. However, very few HEIs (7/39, 17.9%) reported the integration of SIS and LMS;



- A total of 14 HEIs (36.0%, 14/39) reported that the HEI is engaged in e-learning content production. Likewise, 14 HEIs (36.0%, 14/39) produced at least one course on e-learning, of which 13 of them are deployed;
- A total of 149 (27.0%) and 278 (50.5%) faculties currently have access to LMS and SIS, respectively. Of those, 135 (24.5%) faculty members have a single signing access for both;
- Of the total 912 assessed students, a total of 213 (23.3%) and 227 (24.9%) responded that they currently have access to LMS and SIS, respectively. Of those, 198 (21.7%) students have a single signing access for both;
- Result of readiness assessment for e-learning implementation among the different respondents indicated that there is a fertile ground to implement e-learning. This is including online course work expansion, technology utilization and acceptance, automation of information systems, ICT supported learning space; but improvement is needed for special needs, support on research and innovations on digital technologies, among others;
- Only seven HEIs have reported the availability of a policy or guideline to e-learning implementation. Among the seven HEIs with e-learning policy or guideline, only one reported that the policy is currently implemented to govern e-learning implementation.

The overall implications of the findings for the e-SHE program implementation can be described as:

Policy development: There is a clear indication that HEIs require a policy and guidelines that direct the execution of key actions and decisions to implement eLearning. The program implementation can fill this gap through the development, support towards approval and institutional level adoption.

Talent development: The stipulated results with respect to enhancing the capacity of teachers and students and equipping them with the requisite skills to utilize technology in teaching and learning have fertile grounds. This intervention would have been challenged if the level of basic skills of students and teachers were below what is required at least to be able to attend the student and instructor training that is one of



the key components of this program. There is also an encouraging access to end-user devices though this issue needs to be further assessed regarding the risk of widening the digital divide among students pertaining to economic backgrounds and other vulnerability factors.

Resource centers: The establishment of eLearning resource centers appeared to be one of the missing components in the readiness of HEIs to implement eLearning. The speedy establishment, commissioning and running of the five centers in the lead universities and scale up at the other universities is a key factor for the ultimate localization and institutionalization of eLearning practices across the targeted universities.

LMS-SIS upgrading and utilization: There is no uniformity and standardized practice of utilizing LMS and SIS across universities. Universities are better exposed to SIS use. However, there is minimal exposure to integrated LMS-SIS. Besides, there is a promising resource and infrastructure base in most of the universities at least to create access to the eLearning platform though this needs upgrading. Therefore, program's anticipated outcome of upgraded and integrated LMS-SIS can fill the gap in the present practice.

6.2 Recommendations

Based on the findings of this study, below are key recommendations:

- Based on the different results on e-learning implementation and infrastructures a focus to the five lead HEIs is very critical;
- Availability of media lab is very low; however access to resources among those is very minimal;
- There is a similar response among the different respondents about success and failures implementation, one of which is lack of policy and accountability, and variety of deployment options; among others. Hence, standardization of e-learning implementation is very critical for its success;
- The integration of SIS and LMS need to be further checked; and also the utilization should be tracked by HEIs;



- Role out of trainings planned by e-SHE needs to carefully map students based on their background characteristic such as year of enrolment and program type (regular, extension, on/off campus);
- Deployment of courses to other HEIs and full functionality should be improved;
- The project target looks very ambitious, and need to be further revised;



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VII. ANNEXES

7.1. Qualitative Responses (Management)

<i>Major responses about the institution plan in expanding and improving online course work</i>	
Vice/ Deans	Academic Vice Presidents (Additional responses)
<ul style="list-style-type: none"> • Customize platforms (eg. LMS) and strengthen hosting in the HEIs private cloud (data center). • Closely working with partners on how to transform the current way of education to capacitate staff to utilize and introduce e-learning plat forms, blended learning and tele-medicine approaches. • Paper free data collection practice during community-based training program (CBTP and TTP) and student research work. • Creating smart class and technologies that enable e-learning. • Expand the use of technology for the purpose of digitalizing the teaching and Learning process with one of the centers of excellence. • Strengthen the ICT directorate through technology transfer. • Staff and students training on online training. • Expanding online education regardless and upgrading internet. • Digital Library expansion. • Expanding online course preparation. • Awareness creation among students. • Improve the laboratories/media labs. • Improve instructions and infrastructure for students and staffs. • Increase the number of online courses. • Incorporate digital learning in the HEIs strategic plan and train staffs in digital literacy skills. • Expand ICT infrastructures to conduct online teaching on every campus. • Procure big data center server and its journal. • Develop an e-learning policy and implement it. • Integrate e-learning courses in to graduate programs. 	<ul style="list-style-type: none"> • Quick start up of online courses and shift to digital learning • Procurement of e- learning software and adopt computing school as a model. • Strengthen e-learning during thesis evaluation, exit exam model testing and expand online instruction system. • Consider the entire ecosystem by taking a holistic and systemic approach that can leverage the opportunities and overcome the challenges of online education.



*Major responses about the institution plan in expanding and improving **use of technology for teaching and learning***

<i>Vice/Deans</i>	<i>Academic Vice Presidents (Additional responses)</i>
<ul style="list-style-type: none"> • Expand and improve technology applications. • Resource mapping with partners. • Automated student records and use of student placement software. • Conduct training for teachers and students to improve the skills in the use of technology for teaching and learning. • Establish Smart class. • Training leaderships and ICT directorates; and endorsing the ICT Policy. • Arrange and expand the use of VDI rooms for students and staffs. • Training for instructors on how to use LMS and how to prepare online course work. • Improve the laboratory and increase awareness. • Increase accountability by the staffs, students and top management. • Expand the use of technologies for teaching learning process. For instance, E-learning management system is given for faculties and for master’s level students. • Establish smart classrooms. 	<ul style="list-style-type: none"> • Expand the newly developed Learning Management System (LMS) developed by staff from Information Technology Department using MOODLE software from the postgraduate program to undergraduate program. • Software's development, paper free teaching learning. • As part of the Camara Education Project agreement with the Minister of Education (MoE), a Memorandum of Understanding in an effort to further support the integration of ICT into education and maximize the use of educational technologies.

*Major responses about the institution to implement a **unified Automated Management Information System***

<i>Vice Deans</i>	<i>Academic Vice Presidents (Additional responses)</i>
<ul style="list-style-type: none"> • A work in progress - updating data and completing the data feeding. • Using SIMS, HEMIS and e-learning platform • Improve students record system under University Registrar office. • Automate Student Registration System /SRS/; promote one card System. • Strengthen Digital Library. • Strengthen HR information System. 	<ul style="list-style-type: none"> • Scaling up of Integrated Library Management • RFID technology implementation • Advancing the current student information management system • Document tracking systems to boost paper less operations. • Improve the existing research management information system, students’ management information system, leaders assignment information system, property



*Major responses about the institution to implement a **unified Automated Management Information System***

<i>Vice Deans</i>	<i>Academic Vice Presidents (Additional responses)</i>
<ul style="list-style-type: none"> • Implement unified management system for HRM, finance, purchasing. • Implement the advanced technological infrastructures. • Establishing big data center in order to expand the network in the University. 	<p>management system, human resource management system, library information management system and establish a unified automated management information system.</p> <ul style="list-style-type: none"> • Digitalize all departments. • Develop software's such as e-learning, SRE, etc • Automate registrar service, library and other basic services.

*Major responses about the institution to implement activities to **develop ICT supported Teaching-Learning space***

<i>Vice Deans</i>	<i>Academic Vice Presidents (Additional responses)</i>
<ul style="list-style-type: none"> • Implement E-learning system. • Establish smart classrooms/video conferencing. • Preparing space or rooms for studio. • Provide training about ICT support teaching - learning support. • Video conference /Smart Class/. • E-learning System. 	<ul style="list-style-type: none"> • Integration of Learning Management system with Digital library system. • Integration of Repository system with plagiarism software. • Implementation of Cloud storage system for Institutional repository and Online Journal system • Developing the ICT infrastructures like establishment of database and furnishing video conference halls and smart classes with ICT infrastructures. • Conduct training for the staff to effectively implement technology-based teaching learning process. • Prepare smart classrooms to support teaching learning. • Engage ICT as an integral part of teaching-learning interaction. • Use personal devices (such as smartphones or other devices) for learning during class time, and the “flipped classroom” model where students watch lectures at their space on anywhere.

*Major responses about the institution to implement activities assistive **technologies for Special Needs***

<i>Vice Deans</i>	<i>Academic Vice Presidents (Additional</i>



<ul style="list-style-type: none"> • Develop I-pad to support special needs. • Strengthen the existing Assistive Technologies Center containing 20 computers near students' residual location. • There is a dedicated computer with special software for disabled students in the Library and Special needs department computer Labs, hence we have to expand. • Conduct a research on assistive technology. • Avail recording tools, JAWS and earphone and headphones 	<p>responses)</p> <ul style="list-style-type: none"> • Establish a resource center to support the special needs and expand the system. • Developing digital library focusing on special needs. • Avail smart rooms and VDI conducive for special needs. • Avail Jaws software to read screen for Blind students. • Avail embosser to print Braille materials. • Braille services and resources
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Major responses about the institution to implement activities to support Research and Innovation using Digital Technologies

<i>Vice Deans</i>	<i>Academic Vice Presidents (Additional responses)</i>
<ul style="list-style-type: none"> • Establish research repository for completed research works. • Start the use of research management software and electronic data collection software's. • Provide Software teaching and Research presentations, R-software, SPSS software, KOBO tools and digital library. • Advocate and improve e-research System utilization. • Incentives for those using research management software's. • Strengthen the implementation of Research Information Management System (RIMS) to manage research and project activities conducted in the institution. • Improve the use of STEM center used to Support Research and Innovation Using Digital Technologies oriented activities. 	<ul style="list-style-type: none"> • Improve and advocate Open Science Framework. • Upgrading research management system. • Scaling up of AAU- Research Data Repository service. • Development of Preprint Database. • Scaling up of Academic Digital library. • Scaling up of Open Journal System. • Scaling of Anti Plagiarism software tool over HIEs. • Software's: Provide researchers with access to a wide range of software's and tools, including those for data analysis, visualization, and simulation. • Research data services: Establish a research data service center to provide researchers with support for managing, storing, and sharing research data. • Research tracking Unified management information systems: Implement a unified management information system (MIS) to track research projects and funding. • Unified digital library and repository: E establish a unified digital library to provide researchers with access to a wide range of



*Major responses about the institution to implement activities **to support Research and Innovation using Digital Technologies***

<i>Vice Deans</i>	<i>Academic Vice Presidents (Additional responses)</i>
<ul style="list-style-type: none"> • Improve the repository systems for research work • Establish a unified digital library. • Engage with Digital technologies to help researchers and stakeholders. • Roll out the Research Information Management System to support the research & publication Directorate activities. 	<p>scholarly resources."</p> <ul style="list-style-type: none"> • Improve and renovate library digitalization and institutional repository system are functional in the university. • Promote the use of digital libraries, computer laboratories, journal subscription, incubation centers, expand, and develop services in the centers. • Integration of research activities. Upload the research data to the database of Ministry of Education (HEISM) and improve access to data for the public to increase publications and knowledge sharing.

*Major responses about the institution to implement activities **for AI and OER***

<i>Vice Deans</i>	<i>Academic Vice Presidents (Additional responses)</i>
<ul style="list-style-type: none"> • Establish both AI & OER office. • Establish collaborative effort between HEIs and TVETS for technology transfer. 	<ul style="list-style-type: none"> • Identification of Open Scholarly publication. • Identification and integration of Open Educational Resources (Text book, Lecture Material tutorials, ppt ..etc.) digital library • Creating courses, offering personalized learning, enabling universal access, Automation tasks, Providing tutoring support, promoting virtual learning, creating smart content. • Developing AI labs, collaboration efforts between TVETS and HEIs in sharing resources and signing MoU with TVET and other institution.



7.2. ASSESSMENT TOOLS

February 24, 2023

E-Learning for Strengthening Higher Education (e-SHE)

2023 BASELINE SURVEY

HIGHER EDUCATION INSTITUTIONS **ICT DIRECTORATE PERSONNEL** QUESTIONNAIRE

CONSENT/INSTRUCTION:

Dear Partner:

Ethiopia has developed “Digital Ethiopia 2025” as a roadmap for the country’s digital transformation initiatives. In line with this strategy, the FDRE Ministry of Education (MoE) has recently approved the Digital Skills Country Action Plan (DSCAP) for 2020-2030 (MoE 2030). Over the years, the FDRE Ministry of Education (MoE) and the Higher Education Institutes (HEIs) have made a series of investments aimed at building connectivity and enhancing the ICT infrastructure. In response to the broader strategy and lessons from the COVID-19 shocks, the MoE and the HEIs are scaling up their investments toward digital education. The e-Learning for Strengthening Higher Education (e-SHE) is a project partnership initiated to complement these ongoing investments. The e-SHE project is a five-year project implemented by the FDRE Ministry of Education in partnership with Mastercard Foundation, Arizona State University, and Shayashone PLC. The overall goal of the project is to strengthen the higher education system in Ethiopia through the utilization of digital technology for teaching and learning and to equip youth with the skills needed for employment and entrepreneurship.

To this contribution, the FDRE MoE is conducting a baseline assessment to gather information about e-learning implementation among selected Higher Education Institutions (HEIs) in Ethiopia. The data collected from the HEIs will be used to inform the e-learning implementation supported by the e-SHE project, and will only be used to revise the project targets and inform planning. E-SHE will appreciate your responses to the best of your knowledge. This assessment will take about 30-45 minutes to complete. Whatever information you provide will be kept strictly confidential, and will not be shared with anyone other than members of our survey team.

Your prompt and complete response are very important.

Thank you very much in advance!

FOR ANY QUESTION, PLEASE CONTACT THE FOLLOWING COORDINATORS!

Biruk Tensou, +251901248749, biruktensou@gmail.com – for Survey Tools

Eyobe Mulalem, +251922862478, eyob@shayashone.com – for LIME database

IDENTIFICATION – GENERAL BACKGROUND			
Line #	Question	Response/Coding Categories	Skip
Q101	Name of the university	<input type="text"/>	
Q102	Name of the respondent <i>(Hint: Name of the person who is completing this questionnaire)</i>	<input type="text"/>	
Q103	Email of the respondent <i>(Hint: Most frequently used email)</i>	<input type="text"/>	
Q104	Position of the respondent <i>(Hint: Current entitled position of the respondent)</i>	<input type="text"/>	
Q105	To which higher office of the university is the ICT directorate accountable? <i>(Probe: Planning and Reporting structure of the ICT directorate)</i>	<input type="text"/>	
Q106	Please list the key mandates and Objectives of the ICT directorate	<input type="text"/> <input type="text"/>	



Q107	Telephone of the respondent			
Q108	Year of establishment of the HEI			
Q109	Total number of academic staffs			
Q110	Total number of administrative staffs			
Q111	Number of campuses under the university			
Q112	Number of campuses under the university with fiber upgraded			
Q113	Number of campuses under the university on ERP (Enterprise Resource Planning)			
Q114	Number of buildings under the university			
Q115	Number of buildings under the university with Gbps connectivity			
Q116	Number of academic areas under the university <i>(Probe: Academic areas are subject or area of interest to academic professionals, i.e classroom areas, lecture halls, departments, etc)</i>			
Q117	Number of academic areas under the university with Wi-Fi coverage			
Q118	Bandwidth subscription (Gbps) <i>(Probe: Subscribed internet bandwidth of the institution)</i>			
Q119	Bandwidth per pupil (mbps/p)			
Q120	Core network speed			
Q121	Number of EthERNEt connected students			
Q122	Number of EthERNEt connected faculty			
Q123	The HEI is connected to EthERNEt	Yes _____ 1 NO _____ 0		
Q124	Does the institution have data centers hosting and supporting IT services? <i>(Probe: for dedicated power line)</i>	Yes _____ 1 NO _____ 0		
Q125	Does the institution have a VPN in case of internet disruptions by ISPs?	Yes _____ 1 NO _____ 0		
Q126	Proportion of faculty to computer			



	ratio (Help: 1:1 if all have; 2:1 is to mean one computer for two staffs)	<input type="text"/>																																		
Q127	Proportion of student to computer ratio (Help: 1:10 is to mean one computer for ten students)	<input type="text"/>																																		
Q128	Number of functional PCs (connected and not connected) in the university – best possible estimate	<table border="1"> <tr> <td>Administrative</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>Academic</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>Libraries</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>Registrar</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>Other (Medical, etc)</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </table>	Administrative	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Academic	<input type="text"/>	Libraries	<input type="text"/>	Registrar	<input type="text"/>	Other (Medical, etc)	<input type="text"/>																				
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Q130	Number of computer labs, number of PCs and location in the university – best possible estimate	<table border="1"> <thead> <tr> <th>Name of the computer lab</th> <th>Number of computers</th> <th>Location (Faculty/Department)</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	Name of the computer lab	Number of computers	Location (Faculty/Department)																															
Name of the computer lab	Number of computers	Location (Faculty/Department)																																		
Q131	Number of research institutions affiliated with the HEI	<input type="text"/>																																		
E-LEARNING IMPLEMENTATION																																				
Q132	Does this institution have an established resource center (media lab/studio) for e-learning implementation – utilization of LMS/SIS? (Hint: LMS means Learning Management System) (Probe: check for at least an existing infrastructure. If more than one resource center, assess the most functional one)	<table style="width: 100%;"> <tr> <td style="text-align: right;">Yes</td> <td style="text-align: center;">_____</td> <td style="text-align: right;">1</td> </tr> <tr> <td style="text-align: right;">NO</td> <td style="text-align: center;">_____</td> <td style="text-align: right;">0</td> </tr> </table>	Yes	_____	1	NO	_____	0	If NO, Skip to Q134																											
Yes	_____	1																																		
NO	_____	0																																		
Q133	Who mainly owns the media lab or the resource center? (Probe: University or any other entity)	<input type="text"/>																																		
Q134	Which of the following items or equipment's exist in the media	Check For The Availability Of Minimum Requirements																																		



	lab? <i>(Probe: To which higher office of the university is the media lab accountable?)</i>	Items/equipment's A computer with a large hard drive Usable servers Monitor Scanner Printer Desktop transfer protocol Video Camera Microphone Strong internet connection Trained staff on e-learning course development/process Feasibility of the location Space is adequate – meet the standards Power supply (e.g generator, solar supply) Smart UPSs Zoom/other applications Dedicated server Smart classroom with control unit and studio together Smart classroom with interior design, LCD FM radio Other resources (list)	Yes	No	DK																																														
Q135	Number of full time staffs assigned in the media lab/studio.	<table border="1"> <thead> <tr> <th>Position</th> <th>MA/MSc</th> <th>BSc</th> <th>Diploma</th> <th>Others</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	Position	MA/MSc	BSc	Diploma	Others																																												
Position	MA/MSc	BSc	Diploma	Others																																															
Q136	Number of full time staffs assigned in the media lab/studio trained to support e-learning implementation.	<table border="1"> <thead> <tr> <th>Position</th> <th>MA/MSc</th> <th>BSc</th> <th>Diploma</th> <th>Others</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	Position	MA/MSc	BSc	Diploma	Others																																												
Position	MA/MSc	BSc	Diploma	Others																																															
Q137	On average, how many hours per week is the media lab or the resource center is accessible? <i>(Probe: Physical access)</i>	<input type="text"/>																																																	



Q138	<p>Is a Student Information System (SIS) being implemented at the university? <i>Hint: availability of functional registration, financial aid, advising & admission system</i></p>	<table border="1"> <thead> <tr> <th>Department</th> <th>Yes</th> <th>No</th> <th>DK</th> <th>If Yes (Platform)</th> </tr> </thead> <tbody> <tr> <td>Administrative</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Academic</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Library</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Registrar</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Others (Teaching labs, etc)</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Department	Yes	No	DK	If Yes (Platform)	Administrative					Academic					Library					Registrar					Others (Teaching labs, etc)					If all NO/DK, Skip to Q140
Department	Yes	No	DK	If Yes (Platform)																													
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Q139	<p>Is a Learning Management Software used at the university?</p>	<table border="1"> <thead> <tr> <th>Department</th> <th>Yes</th> <th>No</th> <th>DK</th> <th>If Yes (Platform)</th> </tr> </thead> <tbody> <tr> <td>Administrative</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Academic</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Library</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Registrar</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Others (Teaching labs, etc)</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Department	Yes	No	DK	If Yes (Platform)	Administrative					Academic					Library					Registrar					Others (Teaching labs, etc)					If all NO/DK, Skip to Q141
Department	Yes	No	DK	If Yes (Platform)																													
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Library																																	
Registrar																																	
Others (Teaching labs, etc)																																	
Q140	<p>All academic and students related services are reported from the Student Information System</p>	<p>Yes _____ 1 NO _____ 0</p>																															
Q141	<p>Is the SIS and LMS integrated at the university? <i>(Probe: A single-entry system where the students and faculty use the same ID for multiple purpose)</i></p>	<p>Yes _____ 1 NO _____ 0</p>	If Q138 or Q140 is NO, skip this																														
Q142	<p>Does this institution have e-learning coordination office?</p>	<p>Yes (Embedded with the ICT team) _____ 1 Yes (A separate team) _____ NO e-learning coordination office _____ 0</p>	If all NO, Skip to Q144 ▲																														
Q143	<p>Are there assigned e-learning coordinators (team of 2-4) initiated by e-SHE project?</p>	<p>Yes _____ 1 NO _____ 0</p>																															
Q144	<p>Are the focal persons on the media lab or studios incentivized?</p>	<p>Yes _____ 1 NO _____ 0</p>																															
Q145	<p>Is this university engaged in e-learning production? <i>(probe: at least one curriculum should be produced on e-learning platform – LMS/SIS)</i></p>	<p>Yes _____ 1 NO _____ 0</p>	If all NO, Skip to Q150 ▲																														
Q146	<p>Check for the workflow of the course production on e-learning?</p>	<p>CHECK FOR THE WORKFLOW</p> <table border="1"> <thead> <tr> <th>Workflow</th> <th>Yes</th> <th>No</th> <th>DK</th> </tr> </thead> <tbody> <tr> <td>Produced at least one course on e-learning</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Deployed courses</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Deployed to other catchment universities</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Supported staffs on e-learning implementation</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Supported other institutions on e-learning implementation</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Workflow	Yes	No	DK	Produced at least one course on e-learning				Deployed courses				Deployed to other catchment universities				Supported staffs on e-learning implementation				Supported other institutions on e-learning implementation										
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		Other work orders (list)																																																														
Q147	Number of e-learning courses produced to date.	<input type="text"/>																																																														
Q148	Number of e-learning courses deployed to date.	<input type="text"/>																																																														
Q149	Number of e-learning courses fully functional?	<input type="text"/>																																																														
Q150	List other options of media lab considered by the university for e-learning. <i>(probe: FM, etc. Use “ / ”to separate the list)</i>	<input type="text"/>																																																														
Q151	Does this institution have access to a functional enterprise grade e-learning platform? <i>(probe: check for functionality)</i>	Yes	_____	1				If all NO, Skip to ▲ Q153																																																								
		NO	_____	0																																																												
Q152	List the name/s of the enterprise e-learning platform	<input type="text"/>																																																														
Q153	In your opinion, can you tell us key parameters/reasons of e-learning successful implementation?	<table border="1"> <thead> <tr> <th>E-learning Success Parameters</th> <th>Yes</th> <th>No</th> <th>DK</th> </tr> </thead> <tbody> <tr> <td>Aspects can be coded as: Technological roles</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Learning environment</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Learning styles</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Learning achievement</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Equipment capabilities</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Family support</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Peer support</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Student satisfaction</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Completeness of infrastructure</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Flexible and effective e-learning</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Easy accessibility</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Strong policy implementation</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Others</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						E-learning Success Parameters	Yes	No	DK	Aspects can be coded as: Technological roles				Learning environment				Learning styles				Learning achievement				Equipment capabilities				Family support				Peer support				Student satisfaction				Completeness of infrastructure				Flexible and effective e-learning				Easy accessibility				Strong policy implementation				Others				
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Strong policy implementation																																																																
Others																																																																
Q154	In your opinion, can you tell us key parameters/reasons of e-learning implementation failure?	<table border="1"> <thead> <tr> <th>E-learning Failure Parameters</th> <th>Yes</th> <th>No</th> <th>DK</th> </tr> </thead> <tbody> <tr> <td>Lack of technology and skills</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Lack of digital literacy</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Lack of teaching quality</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Lack of interaction</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						E-learning Failure Parameters	Yes	No	DK	Lack of technology and skills				Lack of digital literacy				Lack of teaching quality				Lack of interaction																																								
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Thank you for your assistance!

February 22, 2023

E-Learning for Strengthening Higher Education (e-SHE)

2023 BASELINE SURVEY

HIGHER EDUCATION INSTITUTIONS VICE PRESIDENTS AND DEANS QUESTIONNAIRE

CONSENT/INSTRUCTION:

Dear Faculty Member:

Ethiopia has developed “Digital Ethiopia 2025” as a roadmap for the country’s digital transformation initiatives. In line with this strategy, the FDRE Ministry of Education (MoE) has recently approved the Digital Skills Country Action Plan (DSCAP) for 2020-2030 (MoE 2030). Over the years, the FDRE Ministry of Education (MoE) and the Higher Education Institutes (HEIs) have made a series of investments aimed at building connectivity and enhancing the ICT infrastructure. In response to the broader strategy and lessons from the COVID-19 shocks, the MoE and the HEIs are scaling up their investments toward digital education. The e-Learning for Strengthening Higher Education (e-SHE) is a project partnership initiated to complement these ongoing investments. The e-SHE project is a five-year project implemented by the FDRE Ministry of Education in partnership with Mastercard Foundation, Arizona State University, and Shayashone PLC. The overall goal of the project is to strengthen the higher education system in Ethiopia through the utilization of digital technology for teaching and learning and to equip youth with the skills needed for employment and entrepreneurship.

To this contribution, the FDRE MoE is conducting a baseline assessment to gather information about e-learning implementation among selected Higher Education Institutions (HEIs) in Ethiopia. The data collected from the you as strategic leadership member will be used to inform the e-learning implementation supported by e-SHE project, and will only be used to revise the project targets and inform planning. E-SHE will appreciate your responses to the best of your knowledge. This assessment will take about 20-30 minutes to complete.

Whatever information you provide will be kept strictly confidential, and will not be shared with anyone other than members of our survey team.

Your prompt and complete response are very important.

Thank you very much in advance!

FOR ANY QUESTION, PLEASE CONTACT THE FOLLOWING COORDINATORS!

Biruk Tensou, +251901248749, biruktensou@gmail.com – for Survey Tools

Eyobe Mulalem, +251922862478, eyob@shayashone.com – for LIME database

IDENTIFICATION – GENERAL BACKGROUND							
Line #	Question	Response/Coding Categories	Skip				
Q101	Name of the university	<input type="text"/>					
Q102	Name of the respondent	<input type="text"/>					
Q103	Email of the respondent	<input type="text"/>					
Q104	Telephone number of the student (Hint: Mobile)	<input type="text"/>					
Q105	Sex	<table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Male</td> <td style="text-align: right;">1</td> </tr> <tr> <td style="text-align: right;">Female</td> <td style="text-align: right;">2</td> </tr> </table>	Male	1	Female	2	
Male	1						
Female	2						



Q106	Age <i>(Hint: Age in completed years/birthdays)</i>	<input type="text"/>									
Q107	Educational Qualification	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%; text-align: right;">BSc</td> <td style="width: 20%; text-align: center;">1</td> </tr> <tr> <td style="text-align: right;">MSc/MA</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: right;">PhD</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: right;">Other (specify)</td> <td style="text-align: center;">4</td> </tr> </table>	BSc	1	MSc/MA	2	PhD	3	Other (specify)	4	
BSc	1										
MSc/MA	2										
PhD	3										
Other (specify)	4										
Q108	Position (Current)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%; text-align: right;">Vice president</td> <td style="width: 20%; text-align: center;">1</td> </tr> <tr> <td style="text-align: right;">Dean</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: right;">Others (Specify)</td> <td style="text-align: center;">3</td> </tr> </table>	Vice president	1	Dean	2	Others (Specify)	3			
Vice president	1										
Dean	2										
Others (Specify)	3										
Q109	Year of experience (Total)	<input type="text"/>									
Q110	Year of experience (In this institution)	<input type="text"/>									
Q111	Year of experience (In this position)	<input type="text"/>									
Q112	Please tell us about the institution plan in expanding and improving online course work <i>(Probe: Consider all the ecosystems – technology, skills of students and faculties, policies, etc)</i>	<input type="text"/>									
Q113	Please tell us about the institution plan in expanding and improving the use of technology for teaching learning <i>(Probe: Consider all the ecosystems – technology, skills of students and faculties, policies, etc)</i>	<input type="text"/>									
Q114	Please tell us about the institution plan to Implement a Unified Automated Management Information System <i>(Probe: Consider all the ecosystems – technology, HEIs/TVETs access to technologies, students biometrics, BI solutions, functional units)</i>	<input type="text"/>									
Q115	Please tell us about the institution's plan to Implement activities to Develop ICT Supported Teaching-Learning Space. <i>(Probe: Consider establishments such as CTEs, plan developed, cloud implementations, etc)</i>	<input type="text"/>									
Q116	Please tell us about the institution plan to Implement activities to Implement assistive Technologies for Special Needs <i>(Probe: Researches conducted on assistive technology research, assistive lab established, softwares/tools purchases, I-pads and other tools distributed to assist the disabled)</i>	<input type="text"/>									
Q117	Please tell us about the institution										



	<p>plan to Implement activities to Implement activities to Support Research and Innovation Using Digital Technologies (Probe: Softwares/tools, research data services at EthERNet, coordinators at HPC, Unified management information systems, unified digital library)</p>	<input type="text"/>																																																																																																			
Q118	<p>Please tell us about the institution plan to Implement activities to Implement AI and OER (Probe: established AI offices, AI labs, collaboration efforts between TVETS and HEIs in sharing resources, established OER offices and collaborations, etc)</p>	<input type="text"/>																																																																																																			
Q119	<p>Please rate the institutions readiness to implement e-learning using the likert scale 1-5 1=Not ready, needs a lot of work 2=Not ready, needs some work 3=Ready, but needs a few improvements 4=Ready to go a head 5=Perfectly implementing currently</p>	<table border="1"> <thead> <tr> <th>Parameter</th> <th>Question</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Technical skills readiness</td> <td>Basic knowledge and skills to use computers</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Basic skills to use the internet</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Basic skills and knowledge to use e-learning systems</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Awareness</td> <td>Enough awareness about the importance of e-learning</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="2">Attitude</td> <td>Preference to use e-learning that the traditional methods</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Intentions to use the e-learning systems in the future</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="3">Infrastructural readiness</td> <td>Sufficient access to wireless and or wired internet</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sufficient internet speed to use e-learning</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Have the necessary resources to use e-learning</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="2">Cultural readiness</td> <td>The institution has a good culture of using new technologies</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Inclusion of e-learning usage plan in course outline</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="2">Policy readiness</td> <td>Curricula is designed properly to align with e-learning</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>The institute has an e-learning implementation policy</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Technology readiness</td> <td>The e-learning system has all the necessary functionalities</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Parameter	Question	1	2	3	4	5	Technical skills readiness	Basic knowledge and skills to use computers						Basic skills to use the internet						Basic skills and knowledge to use e-learning systems						Awareness	Enough awareness about the importance of e-learning						Attitude	Preference to use e-learning that the traditional methods						Intentions to use the e-learning systems in the future						Infrastructural readiness	Sufficient access to wireless and or wired internet						Sufficient internet speed to use e-learning						Have the necessary resources to use e-learning						Cultural readiness	The institution has a good culture of using new technologies						Inclusion of e-learning usage plan in course outline						Policy readiness	Curricula is designed properly to align with e-learning						The institute has an e-learning implementation policy						Technology readiness	The e-learning system has all the necessary functionalities						
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		<p><i>Top management readiness</i></p> <p><i>The top management involvement with e-learning function is strong</i></p> <p><i>The top management is interested in the e-learning function</i></p> <p><i>The top management understand the importance & opportunities of e-learning</i></p> <p><i>The top management support & encourage me to use the e-learning system</i></p> <p><i>The top management consider e-learning as a strategic resource</i></p> <p><i>The top management puts pressure on departments to use e-learning</i></p> <p><i>The top management of my institute owns e-learning as a core task</i></p> <p><i>The top management has a strong commitment to implement e-learning</i></p>								
Q120	Are staffs implementing e-learning incentivized?		Yes _____	1						If No, Skip to Q112
			NO _____	0						
Q121	If Yes, how are staff incentivized?	<input type="text"/>								
Q122	Would you like to add any additional information in relation to e-learning implementation at your institutions? (Probe: Implementation, Visions, etc. Use "/" to separate your responses)	<input type="text"/> <input type="text"/> <input type="text"/>								END

Thank you for your assistance!

February 12, 2023

E-Learning for Strengthening Higher Education (e-SHE)
2023 BASELINE SURVEY

HIGHER EDUCATION INSTITUTIONS **FACULTY OF UNIVERSITIES** QUESTIONNAIRE

CONSENT/INSTRUCTION:

Dear Faculty Member:

Ethiopia has developed "Digital Ethiopia 2025" as a roadmap for the country's digital transformation initiatives. In line with this strategy, the FDRE Ministry of Education (MoE) has recently approved the Digital Skills Country Action Plan (DSCAP) for 2020-2030 (MoE 2030). Over the years, the FDRE Ministry of Education (MoE) and the Higher Education Institutes (HEIs) have made a series of



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Your prompt and complete response are very important.

Thank you very much in advance!

FOR ANY QUESTION, PLEASE CONTACT THE FOLLOWING COORDINATORS!

Biruk Tensou, +251901248749, biruktensou@gmail.com – for Survey Tools

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Q103	Email of the faculty member	<input type="text"/>									
Q104	Telephone number of the faculty member? (Hint: Mobile)	<input type="text"/>									
Q105	Sex	<table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Male</td> <td style="text-align: right;">1</td> </tr> <tr> <td style="text-align: right;">Female</td> <td style="text-align: right;">2</td> </tr> </table>	Male	1	Female	2					
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Q108	Year of experience	<input type="text"/>									
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Academic	1										
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Q110	Department <i>(Hint: Write faculty department, registrar, finance, admin, etc)</i>	<input style="width: 100%; height: 20px;" type="text"/>																																																																																							
Q111	<p>Do you have access to the following technological resource lists? <i>(Hint: Tick those you have access to)</i></p>	<table border="1"> <thead> <tr> <th data-bbox="570 291 1127 323">Technological skills</th> <th data-bbox="1127 291 1198 323">Yes</th> <th data-bbox="1198 291 1305 323">No</th> <th data-bbox="1305 291 1401 323">DK</th> </tr> </thead> <tbody> <tr> <td data-bbox="570 323 1127 375">Personal computer (Pc/Laptop)/smartphone</td> <td data-bbox="1127 323 1198 375"></td> <td data-bbox="1198 323 1305 375"></td> <td data-bbox="1305 323 1401 375"></td> </tr> <tr> <td data-bbox="570 375 1127 407">Dependable computer (in school, cafes, etc)</td> <td data-bbox="1127 375 1198 407"></td> <td data-bbox="1198 375 1305 407"></td> <td data-bbox="1305 375 1401 407"></td> </tr> <tr> <td data-bbox="570 407 1127 459">Computer with all necessary software installed</td> <td data-bbox="1127 407 1198 459"></td> <td data-bbox="1198 407 1305 459"></td> <td data-bbox="1305 407 1401 459"></td> </tr> <tr> <td data-bbox="570 459 1127 491">Computer with a printer installed</td> <td data-bbox="1127 459 1198 491"></td> <td data-bbox="1198 459 1305 491"></td> <td data-bbox="1305 459 1401 491"></td> </tr> <tr> <td data-bbox="570 491 1127 543">Computer with internet connection (home, personal, café, campus, internet cafes, etc)</td> <td data-bbox="1127 491 1198 543"></td> <td data-bbox="1198 491 1305 543"></td> <td data-bbox="1305 491 1401 543"></td> </tr> <tr> <td data-bbox="570 543 1127 648">Computer with installed search engines (Google, Ask) and internet browsers (Firefox, Google chrome, Internet Explorer, Microsoft Edge, etc)</td> <td data-bbox="1127 543 1198 648"></td> <td data-bbox="1198 543 1305 648"></td> <td data-bbox="1305 543 1401 648"></td> </tr> <tr> <td data-bbox="570 648 1127 680">Computer is protected with antivirus</td> <td data-bbox="1127 648 1198 680"></td> <td data-bbox="1198 648 1305 680"></td> <td data-bbox="1305 648 1401 680"></td> </tr> <tr> <td data-bbox="570 680 1127 720">Other resources (list)</td> <td data-bbox="1127 680 1198 720"></td> <td data-bbox="1198 680 1305 720"></td> <td data-bbox="1305 680 1401 720"></td> </tr> </tbody> </table>	Technological skills	Yes	No	DK	Personal computer (Pc/Laptop)/smartphone				Dependable computer (in school, cafes, etc)				Computer with all necessary software installed				Computer with a printer installed				Computer with internet connection (home, personal, café, campus, internet cafes, etc)				Computer with installed search engines (Google, Ask) and internet browsers (Firefox, Google chrome, Internet Explorer, Microsoft Edge, etc)				Computer is protected with antivirus				Other resources (list)																																																						
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Q112	<p>Do you have the following basic skills? <i>(Hint: Tick those you are skillful to)</i></p>	<table border="1"> <thead> <tr> <th data-bbox="570 747 1127 779">Basic computer skills</th> <th data-bbox="1127 747 1198 779">Yes</th> <th data-bbox="1198 747 1305 779">No</th> <th data-bbox="1305 747 1401 779">DK</th> </tr> </thead> <tbody> <tr> <td data-bbox="570 779 1127 884">Basic functions of computer hardware components (CPU and monitor) including its peripherals like printers, speaker, and mouse</td> <td data-bbox="1127 779 1198 884"></td> <td data-bbox="1198 779 1305 884"></td> <td data-bbox="1305 779 1401 884"></td> </tr> <tr> <td data-bbox="570 884 1127 915">Save/Open documents to/from</td> <td data-bbox="1127 884 1198 915"></td> <td data-bbox="1198 884 1305 915"></td> <td data-bbox="1305 884 1401 915"></td> </tr> <tr> <td data-bbox="570 915 1127 999">Software installation, changing and configuration settings on a computer (date, time, layouts, regular backups, etc)</td> <td 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Q119	Are both LMS and SIS integrated? (Hint: Do you use a single username to sign in to both LMS and SIS?)	Yes _____ 1 NO _____ 0				If either Q113 or Q116 is NO, SKIP to Q120																																				
Q120	Please rate your readiness to implement e-learning using the likert scale 1-5 1=Not ready, needs a lot of work 2=Not ready, needs some work 3=Ready, but needs a few improvements 4=Ready to go a head 5=Perfectly implementing currently	<table border="1"> <thead> <tr> <th>Parameter</th> <th>Question</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Technical skills readiness</td> <td>Basic knowledge and skills to use computers</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Basic skills to use the internet</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Basic skills and knowledge to use e-learning systems</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Awareness</td> <td>Enough awareness about the importance of e-learning</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Parameter	Question	1	2	3	4	5	Technical skills readiness	Basic knowledge and skills to use computers						Basic skills to use the internet						Basic skills and knowledge to use e-learning systems						Awareness	Enough awareness about the importance of e-learning												
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		<i>Attitude</i>	<i>Preference to use e-learning that the traditional methods</i>						
			<i>Intentions to use the e-learning systems in the future</i>						
		<i>Infrastructural readiness</i>	<i>Sufficient access to wireless and or wired internet</i>						
			<i>Sufficient internet speed to use e-learning</i>						
			<i>Have the necessary resources to use e-learning</i>						
		<i>Cultural readiness</i>	<i>The institution has a good culture of using new technologies</i>						
			<i>Inclusion of e-learning usage plan in course outline</i>						
		<i>Policy readiness</i>	<i>Curricula is designed properly to align with e-learning</i>						
			<i>The institute has an e-learning implementation policy</i>						
		<i>Technology readiness</i>	<i>The e-learning system has all the necessary functionalities</i>						
		<i>Top management readiness</i>	<i>The top management involvement with e-learning function is strong</i>						
			<i>The top management is interested in the e-learning function</i>						
			<i>The top management understand the importance & opportunities of e-learning</i>						
			<i>The top management support & encourage me to use the e-learning system</i>						
			<i>The top management consider e-learning as a strategic resource</i>						
			<i>The top management puts pressure on departments to use e-learning</i>						
			<i>The top management of my institute owns e-learning as a core task</i>						
<i>The top management has a strong commitment to implement e-learning</i>									
Q121	Are staffs implementing e-learning incentivized?	Yes _____ 1 NO _____ 0							



Q122	If Yes, how are staff incentivized ?	<input type="text"/>	If Yes
Q123	Would you like to add any additional information in relation to e-learning implementation? (Use "/" to separate your responses)	<input type="text"/> <input type="text"/> <input type="text"/>	END

Thank you for your assistance!

February 12, 2023

E-Learning for Strengthening Higher Education (e-SHE)
2023 BASELINE SURVEY
HIGHER EDUCATION INSTITUTIONS **STUDENTS** QUESTIONNAIRE

CONSENT/INSTRUCTION:

Dear Student:

Ethiopia has developed “Digital Ethiopia 2025” as a roadmap for the country’s digital transformation initiatives. In line with this strategy, the FDRE Ministry of Education (MoE) has recently approved the Digital Skills Country Action Plan (DSCAP) for 2020-2030 (MoE 2030). Over the years, the FDRE Ministry of Education (MoE) and the Higher Education Institutes (HEIs) have made a series of investments aimed at building connectivity and enhancing the ICT infrastructure. In response to the broader strategy and lessons from the COVID-19 shocks, the MoE and the HEIs are scaling up their investments toward digital education. The e-Learning for Strengthening Higher Education (e-SHE) is a project partnership initiated to complement these ongoing investments. The e-SHE project is a five-year project implemented by the FDRE Ministry of Education in partnership with Mastercard Foundation, Arizona State University, and Shayashone PLC. The overall goal of the project is to strengthen the higher education system in Ethiopia through the utilization of digital technology for teaching and learning and to equip youth with the skills needed for employment and entrepreneurship.

To this contribution, the FDRE MoE is conducting a baseline assessment to gather information about e-learning implementation among selected Higher Education Institutions (HEIs) in Ethiopia. The data collected from you as HEIs student will be used to inform the e-learning implementation supported by e-SHE project, and will only be used to revise the project targets and inform planning. E-SHE will appreciate your responses to the best of your knowledge. This assessment will take about 20-30 minutes to complete. Whatever information you provide will be kept strictly confidential, and will not be shared with anyone other than members of our survey team.

Your prompt and complete response are very important.

Thank you very much in advance!

FOR ANY QUESTION, PLEASE CONTACT THE FOLLOWING COORDINATORS!

Biruk Tensou, +251901248749, biruktensou@gmail.com – for Survey Tools

Eyobe Mulalem, +251922862478, eyob@shayashone.com – for LIME database

1.1. IDENTIFICATION – GENERAL BACKGROUND			
Line #	Question	Response/Coding Categories	Skip
Q101	Name of the university	<input type="text"/>	
Q102	Name of the student	<input type="text"/>	
Q103	Email of the student	<input type="text"/>	
Q104	Telephone number of the student (Hint: Mobile)	<input type="text"/>	



Q105	Sex	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: right;">Male</td> <td style="width: 50%; text-align: right;">1</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right;">Female</td> <td style="border-top: 1px solid black; text-align: right;">2</td> </tr> </table>	Male	1	Female	2																																	
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Q106	Age (Hint: Age in completed years/birthdays)	<input style="width: 100%;" type="text"/>																																					
1.2. ENROLLMENT																																							
Q107	Year of study (Hint: Academic year)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: right;">Freshman (First year)</td> <td style="width: 50%; text-align: right;">1</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right;">Second year</td> <td style="border-top: 1px solid black; text-align: right;">2</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right;">Third year</td> <td style="border-top: 1px solid black; text-align: right;">3</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right;">Fourth year</td> <td style="border-top: 1px solid black; text-align: right;">4</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right;">Fifth year</td> <td style="border-top: 1px solid black; text-align: right;">5</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right;">Sixth year</td> <td style="border-top: 1px solid black; text-align: right;">6</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right;">Other (Specify)</td> <td style="border-top: 1px solid black; text-align: right;">9</td> </tr> </table>	Freshman (First year)	1	Second year	2	Third year	3	Fourth year	4	Fifth year	5	Sixth year	6	Other (Specify)	9	If 1, Skip Q109 to																						
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Q108	Department (Hint: Write Freshman if department is not assigned)	<input style="width: 100%;" type="text"/>	If not freshman																																				
Q109	Program enrolled	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: right;">Regular (Undergraduates) – In campus</td> <td style="width: 50%; text-align: right;">1</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right;">Regular (Undergraduates) – Off campus</td> <td style="border-top: 1px solid black; text-align: right;">2</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right;">Extension– In campus</td> <td style="border-top: 1px solid black; text-align: right;">3</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right;">Extension– Off campus</td> <td style="border-top: 1px solid black; text-align: right;">4</td> </tr> </table>	Regular (Undergraduates) – In campus	1	Regular (Undergraduates) – Off campus	2	Extension– In campus	3	Extension– Off campus	4																													
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1.3. SKILLS																																							
Q110	Do you have access to the following technological lists? (Hint: Tick those you have access to)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Technological skills</th> <th style="text-align: center;">Yes</th> <th style="text-align: center;">No</th> <th style="text-align: center;">DK</th> </tr> </thead> <tbody> <tr> <td>Personal computer (Pc/Laptop)/smartphone</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dependable computer (in school, cafes, etc)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Computer with all necessary software installed</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Computer with a printer installed</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Computer with internet connection (home, personal, café, campus, internet cafes, etc)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Computer with installed search engines (Google, Ask) and internet browsers (Firefox, Google chrome, Internet Explorer, Microsoft Edge, etc)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Computer is protected with antivirus</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other resources (list)</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Technological skills	Yes	No	DK	Personal computer (Pc/Laptop)/smartphone				Dependable computer (in school, cafes, etc)				Computer with all necessary software installed				Computer with a printer installed				Computer with internet connection (home, personal, café, campus, internet cafes, etc)				Computer with installed search engines (Google, Ask) and internet browsers (Firefox, Google chrome, Internet Explorer, Microsoft Edge, etc)				Computer is protected with antivirus				Other resources (list)				
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Q111	Do you have skills to the following basic skills? (Hint: Tick those you are skillful to)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Basic computer skills</th> <th style="text-align: center;">Yes</th> <th style="text-align: center;">No</th> <th style="text-align: center;">DK</th> </tr> </thead> <tbody> <tr> <td>Basic functions of computer hardware components (CPU and monitor) including its peripherals like printers, speaker, and mouse</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Save/Open documents to/from</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Software installation, changing and configuration settings on a computer (date, time, layouts, regular backups, etc)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Know how troubleshoot or have access to</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Basic computer skills	Yes	No	DK	Basic functions of computer hardware components (CPU and monitor) including its peripherals like printers, speaker, and mouse				Save/Open documents to/from				Software installation, changing and configuration settings on a computer (date, time, layouts, regular backups, etc)				Know how troubleshoot or have access to																				
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		I know how to use spreadsheet application (Ms-Excel)			
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		I have attended online classes			
		I have prior training on student success			
		I have used a Learning Management System (LMS) before			
		I have used a Student Information System (SIS) before			
		I have the skills to modify and add content and assessment using an online learning management system			
		I have attended seminars/workshops related to online learning activities			
		Other resources (list)			

1.4. LMS AND SIS EXPERIENCE & ATTITUDE

Q112	Do you currently have access to Learning Management System(LMS) ? <i>(Hint: A learning management system (LMS) is a software application or web-based technology used to plan, implement and assess a specific learning process)</i>	Yes _____ 1 NO _____ 0	If all NO, Skip to Q115
Q113	If Yes, tell us how you find the LMS useful.	<input type="text"/>	
Q114	If Yes, tell us any areas of improvement for LMS use.		
Q115	Do you currently have access to Student Information System (SIS)? <i>(Hint: A Student Information System – or SIS is a platform that</i>	Yes _____ 1 NO _____ 0	If all NO, Skip to Q119



	<i>contains all the information of the students in an institute, in a digital format. From course enrollment and student attendance to grades and course history, SIS maintains records spanning the student's entire academic career.e.g. online course registration, etc)</i>						
Q116	If Yes, tell us how you find the SIS useful.	<input type="text"/>					
Q117	If Yes, tell us any areas of improvement for SIS use.						
Q118	Are both LMS and SIS integrated? <i>(Hint: Do you use a single user name to sign in to both LMS and SIS?)</i>	<table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Yes</td> <td style="text-align: right;">1</td> </tr> <tr> <td style="text-align: right;">NO</td> <td style="text-align: right;">0</td> </tr> </table>	Yes	1	NO	0	If either Q112 or Q115 is NO, SKIP to Q119
Yes	1						
NO	0						
Q119	Would you like to add any capacity building or support you would like to have for online learning. <i>(Use "/" to separate your responses)</i>	<input type="text"/> <input type="text"/> <input type="text"/>					
Q120	Would you like to add any additional information in relation to e-learning implementation? <i>(Use "/" to separate your responses)</i>	<input type="text"/> <input type="text"/> <input type="text"/>	END				

Thank you for your assistance!



7.2. ESTABLISHED INDICATORS

Target 1: [1.1. Number of universities with established resource centers (medial labs/studios) fulfilling minimum requirement to provide technical guidance to university staffs on e-learning and utilization of LMS and SIS platform]
Target 1: [1.2. Number of universities with established resource centers engaged in e-learning course production]
Target 1: [1.3. Number of universities with existing multimedia center irrespective of functionality, proposed multimedia center]
Target 2: [2.1. Number of universities with access to functional enterprise grade e-learning platform]
Target 2: [2.2. Number of digital courses (e-learning) fully functional]
Target 2: [2.3. Proportion of students with universal LMS and SIS access]
Target 3: [3.1. Number of graduates with Master class trainees (Foundation for Excellence in teaching online)]
Target 3: [3.2. Number of graduates with Graduate certificate trainees]
Target 3: [3.3. Number of students trained on students success training]
Target 3: [3.4. Number of students trained in fundamental digital skills (Fundamentals of ICT)]
Target 3: [3.5. Number of faculty trained in fundamental digital skills (Fundamentals of ICT) in rapid skilling program]
Target 3: [3.6. Number of faculty trained in the selected digital skills courses rapid skilling]
Target 4: [4.1. Number of available e-learning policies/guideline and internal protocols produced/adapted to govern e-learning implementation]
Target 4: [4.2. Number of e-learning policies/guideline and internal protocols implemented to govern e-learning implementation]
Target 5: [5.1. Number of EthERNet connected HEIs]
Target 5: [5.2. Number of EthERNet connected students]
Target 5: [5.3. Number of EthERNet connected faculty]
Target 5: [5.4. Total bandwidths subscription (Gbps)]
Target 5: [5.6. Core network speed]
Target 5: [5.7. Proportion of campuses fiber upgraded]
Target 5: [5.8. Proportion of buildings with Gbps/connectivity]
Target 5: [5.9. Proportion of academic areas Wi-Fi covered]
Target 5: [5.10. Bandwidth per pupil (mbps/p)]
Target 5: [5.11. Proportion of campuses on ERP]
Target 5: [5.12. Proportion of faculty staffs with access to e-learning devices]
Target 5: [5.13. Proportion of students with access to e-learning devices]
Target 5: [5.14. Proportion of faculty to computer ratio]
Target 5: [5.15. Proportion of students to computer ratio]