COMMONWEALTH *of* LEARNING

Report of the Benchmarking of Technology-Enabled Learning at Universiti Sains Malaysia

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The Commonwealth of Learning (COL) is an intergovernmental organisation created by Commonwealth Heads of Government to promote the development and sharing of open learning and distance education knowledge, resources, and technologies.

Acknowledgements

Table of Contents

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Introduction and background

Benchmarking is an important tool to compare and make deliberate progress in any field of human endeavour. For integration of technology for teaching and learning, this is relatively a new field. The Commonwealth of Learning (COL) promotes the use of technology-enabled learning (TEL) – also referred to as "digital learning" - for improving access to and quality of education and training in the Commonwealth. The approach has been to support policy development, improve institutional capacities and technological infrastructure to leverage the potentials of TEL. The process follows three-phases systematically – (i) Preparation, (ii) Development and (iii) Maturation. Benchmarking is part of phase three, which indicates that the educational institution has taken steps to implement TEL in a systematic manner and is ready to take the next leap to continue the cycle of development. As such, the process of benchmarking is important, where it is expected that the institution as a whole participate, and the activities are validated by external experts to provide guidance and advice. Therefore, it is as much an internal exercise as an external validation activity.

The Ministry of Higher Education (MoHE), Government of Malaysia recognises the importance of technology-enabled learning in its Malaysia Education Blueprint 2015-2025 (Higher Education), which focuses on global online learning. There is also a national eLearning policy (DePAN 2.0) and a detailed eLearning guidelines for Malaysia Higher Education Institutions (HEIs). Most HEIs follow these policy and guidelines to provide increasing access to quality higher education in Malaysia. Malaysia, as a country has also taken steps in focusing on developing massive open online courses and promote future proof talents based on the needs of the 4th industrial revolution.

In 2023, the MoHE requested COL to support assessing the status of technology-enabled learning in select public universities of Malaysia by adopting COL's TEL Benchmarking Toolkit. COL interacted with several universities, and only two universities came forward to participate in the process. Universiti Sains Malaysia is one of the two universities where COL applied the TEL benchmarking toolkit.

This report presents the findings of the TEL benchmarking carried out at the UNIVERSITI SAINS MALAYSIA (USM) during September - November 2023. It provides an overview of the methodology, the validated self-study report and an action plan developed by the USM team.

Process and Methods

Once USM agreed to use COL's *TEL Benchmarking Toolkit[1]*, COL engaged a consultant to support USM remotely and validate the self-study report. A brief description of the process followed is given below. It may be noted that in contrast to the advice in the Toolkit to use two experts for the validation process, this report used only one expert engaged by COL. This was due to the cost to USM of using a peer institution in Asia to support this process.

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[1] http://oasis.col.org/handle/11599/3217

USM nominated more than 30 staff members to work on the ten domains of the *Toolkit* with representation by both men and women (Annex-A).

The activities during the Benchmarking exercise had six distinct stages:

A. Setting-up processes and documentation: The Consultant discussed and agreed with the key contact at USM regarding the protocols of sharing and copying emails. An online storage and collaboration space was created to share the data and reports coming from the 10 domain teams. The Consultant also introduced the benchmarking process to the members of the Benchmarking team at USM, and MoHE representatives through video-conferencing facilitated by COL at the beginning of September 2023.

B. Self-review: This was carried out by the team members and their reports with evidence shared via the online storage and collaboration space.

C. Validation of self-review: This was carried out by the Consultant. In the process, several queries were made to provide additional information and the Consultant moderated the scores, where the evidence provided were not sufficiently justifying the scores or aligned with the rationale.

D. Action Plan Development: A draft three-year action plan was prepared by the teams, and the Consultant interviewed nominated key stakeholders (Annex-B) to discuss the Action Plan and Self-Review. The key contacts at USM attended the interview and consolidated the feedback. While the original Action Plan is with USM, Annex-C presents key actions that are needed to make USM a strong TEL implementing institution.

E. Closing and Reporting: The Consultant finally presented the findings in a ZOOM session with the senior management and key team members of the TEL Benchmarking team on 30th October 2023. The present narrative report is also part of this stage, where the report has been reviewed by the university concerned before submitted to the MoHE.

Validated Self-Study Report

COL's TEL Benchmarking Toolkit has ten domains to ensure that a base level of quality practices is present. Each of the benchmarking domains contains four to six performance indicators (PIs). Inherent within the PIs is the understanding that an institution may score well in one and not in another, but that this information is then used as a stimulus to improve in certain areas.

The benchmarking domains are:
1. Policy
2. Strategic Plan
3. IT Support
4. Technology Applications
5. Content Development
6. Documentation
7. Organisational Culture
8. Leadership
9. Human Resource Training
10. Technology-Enabled Learning Champions

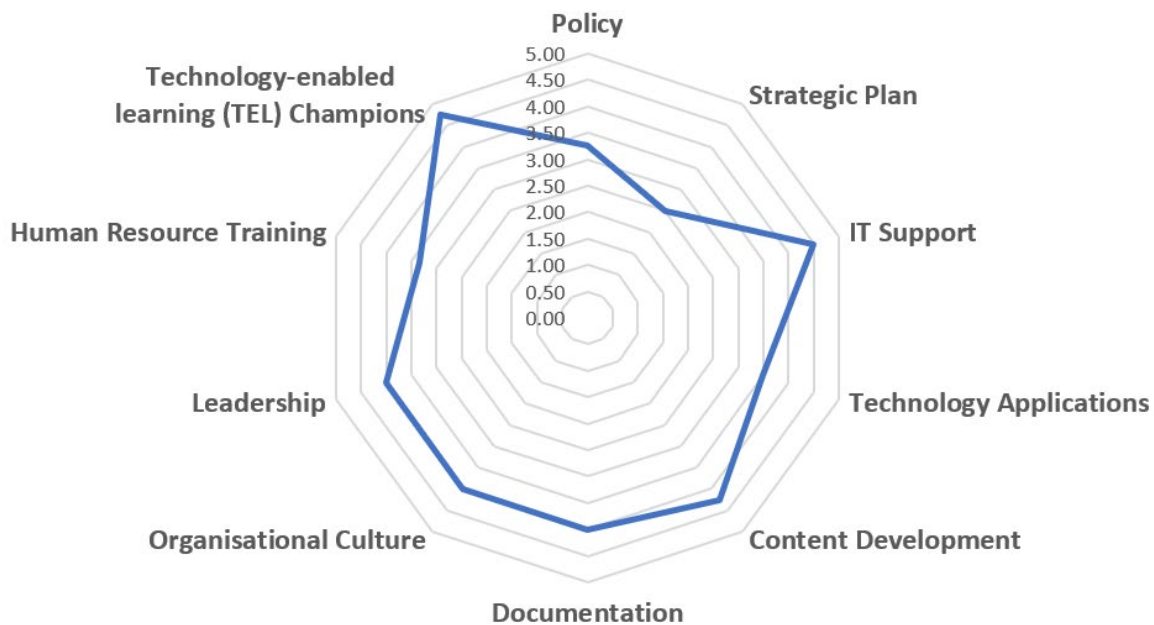Below are the consolidated scores at USM of the 10 domains.

Figure 1: Ten dimensions of TEL Benchmarking at USM

| **Policy** | **Score: 3.25** |

Description: The existence of a TEL policy provides direction for the use of technology in learning and teaching. It can be known by other names, such as an eLearning Policy, but its focus is to integrate technology in teaching and learning.

The e-learning policy of USM (DePUSM) was established in 2011 based on the National e-learning Policy (DePaN). It consists of five pillars - infrastructure, organizational structure, curriculum and e-content, professional development, and enculturation. It has been applied in the planning and execution of activities and initiatives related to e-learning in USM.

The vision of DePUSM is aligned with USM's vision (Transforming Higher Education for a Sustainable Tomorrow). The Centre for the Development of Academic Excellence or CDAE - with the support by the Centre for Knowledge, Communication and Technology - is the key department to plan, execute and monitor the policy and activities. In addition, the policy is aligned with USM's Institution Educational Goal No 4 (IEG4).

Generally, the vision of DePUSM is not well understood across the institution as it was not widely spread and communicated to the community.

The strong commitment from the institutional leaders in ensuring the use of technology to achieve strategic academic goals can be seen in various initiatives including the use of standard Learning Management System (elearn@USM), professional development courses and trainings, MOOC@USM, and Micro-credential@USM.

Description: The strategic plan ensures the commitment to TEL is implemented in a time- bound manner.

Initial attempts to find USM's TEL strategic plan were unsuccessful, raising concerns about the university's readiness for TEL adoption. Given TEL's importance, further investigation was warranted.

A focused survey was conducted with key USM personnel to confirm the existence of a TEL strategic plan. Respondents included past and current Deputy Vice Chancellors (Academic), CDAE Directors, and the PTPM Director. The survey had mixed outcomes, but the current Deputy Vice Chancellor (Academic) provided a definitive answer by sharing the plan, which is part of USM's 2022-2024 strategy. Additionally, the former Deputy Vice Chancellor (Academic) pointed out that various TEL guidelines are already accessible on USM's eLearning website. This indicates that while a unified strategic plan may be in development or less known, there are existing resources that guide TEL practices at the university.

The TEL strategic plan, being a recent addition to USM's 2022-2024 strategy, has limited evidence of actual promotion. A single promotional activity was found in the provided link, but it was not explicitly aligned with the strategic objectives involving TEL. This raises questions about the plan's current operationalization and how closely it is being followed in practice.

The USM strategic plan for 2022-2024 does include objectives and measurable outcomes related to life-long learning programs, which encompass some elements of TEL. However, this coverage is notably incomplete and primarily focuses on internal objectives within the academic division, leaving gaps in addressing the broader university ecosystem.

From gathered information, the university has been supporting the operation of CDAE. Even though there is no actual plan for TEL, there are definite indications of USM's interest in TEL via CDAE (or even PTPM). CDAE, being the main center for academic excellence, has procured a few technical setups for online learning and the development of MOOC and Micro-credential courses. A studio with a complete facility has been set up in CDAE to support lecturers wanting to develop online materials. Besides, CDAE also has carried out a vast number of TOTs to enhance and empower academics with technology related to education. This aimed to assist them in using technology in teaching and learning.

Description: The IT support department or a similar department is responsible for a centralised or decentralised approach to providing infrastructure support in the institution.

USM has an IT department. It is called Pusat Pengetahuan, Komunikasi dan Teknologi (PPKT). Universiti Sains Malaysia has four campuses (main, engineering, health, advanced medical, and dental institute), each with its own PPKT. The department provides a wide range of end-to-end services for teaching and learning, but it also supports admin, research, and innovation. However, the distribution of teaching and learning technology to academics or end users is done by the Centre

for Development and Academic Excellence (CDAE).

USM offers educational and research opportunities and also aims to produce holistic talents to raise the level of excellence in higher education.

The IT support department has established one policy: the Information and Communication Technology Policy, which explains the university's policy regarding the management, usage, services, and security of ICT resources, as well as the rights, responsibilities, actions, and the relevant centres of responsibility or departments.

One policy objective is to create a conducive and safe environment to assist in all university matters, whether for teaching, learning, research, services, management, or administration. Therefore, it serves as the baseline for the ICT department to ensure the services provided are aligned and fulfil the needs of the university.

The IT support head is answerable to the deputy vice chancellor of the industrial network, community & institutional sustainability division. They have a meeting every two months, an Institutional Development Executive Meeting, chaired by the deputy vice-chancellor. This is stated in the terms of reference.

The IT support head must provide specific information to be presented to the university management committee. Reference: 5G - JKPU - rev1.1. Twice a year, IT support will have an information technology council meeting chaired by the vice-chancellor. The IT support will have ad-hoc sessions with the Chief Information Officer, especially on the USM Digitalization Strategic Plan.

The IT Support department is heavily responsible and covers almost all technology sections in the organization. The four main divisions are 1) the administrative and corporate management division, 2) the infrastructure division, 3) the information systems division, and 4) the digital management division. Each division has diverse sections that cover specific aspects of IT, e.g., website design, networking, application development, and cyber security.

There are two committees that are involved in overseeing the ICT policy:
1) The Information Technology Council - a planning body for the development and utilization of information technology at USM. The document "Policy on the Use of Information Technology and Electronic Communication" is one of the documents prepared by the council.
2) The university management committee- a committee chaired by the vice-chancellor, all deputy vice-chancellors, all branch campus heads, the registrar, the bursar, the chief librarian, the legal advisor, and any other senior university staff appointed by the vice-chancellor. This committee advises the vice chancellor on administrative functions and management of the university, including the ICT.

The head of the IT support department is very well qualified and highly experienced. He has more than 20 years of experience in the field. His main degree is in computer science. He was also involved in the drafting of the USM ICT policy in 2011.

Description: Appropriate technologies are deployed for teaching, learning and assessment as per standard academic practices.

USM provides sufficient infrastructure to support TEL. The infrastructure provided includes USMNet network system, software for teaching and learning, and computer hardware such as laptops and desktops. Almost all academic staff are allocated PCs or laptops through PPKT distribution and through computer grants. USM also provides learning laboratories complete with PC and LCD. Most of the students use their own devices on campus with free wi-fi and wired connectivity, which can access the Internet via the USMNet.

USM provides a dedicated portal to support teaching, learning, assignments and exams. For teaching and learning, the elearn@USM portal is available. Assessment portal for online assignments and examonline@USM for online examinations. All these portals use Moodle and are hosted locally. The assessment and examination portal are equipped with Respondus Monitor software as an aid to proctoring.

Respondus Monitor is a fully automated proctoring solution. Students use a webcam to record themselves during an online exam. Afterward, flagged events and proctoring results are available to the instructor for further review.

USM also subscribes to the Cisco Webex application to support learning and teaching. Microsoft 365 applications such as Outlook, OneDrive, SharePoint, Teams, Word, Excel and PowerPoint are also available for students and staff. Microsoft 365 is a facility provided to USM staff and students through a subscription contract by MOHE.

USM also uses several other software licensed under MOHE such as Adobe Suite and AutoCAD. Other specialized software subscribed by USM to support TEL are OpenLearning, Panopto, SAS, Open Athens, Catia, ChemDraw, Mathematica, Matlab, NVivo, SPSS and Turnitin. The subscription of these high-cost software shows USM's high commitment in supporting TEL.

USM provides network facilities for students and staff. It covers LAN (Local Area Network), MAN (Metropolitan Area Network) and WAN (Wide Area Network) networks that are comfortable, robust, reliable and secure to support all ICT needs including teaching and learning. Internet access is provided through two providers, namely MYREN and TM. Internet access via TM has a bandwidth capacity of 2Gbps while access via MYREN has a bandwidth capacity of 10 Gbps. The main access to the Internet is through MYREN while the TM line is used to access the Data Center and as a backup line for the Internet. All USM campuses are connected through the TM intercampus line based on internet protocol virtual private network (ipvpn) technology. Services that use intercampus access are Voice Over IP (VoIP), video conferencing, data center backup and access to university application systems. There are over 5000 fixed network nodes available at USM. It is used to connect servers, PCs, printers, network hardware and other hardware to the network.

USM also provides more than 2500 wireless access points around the campus. This allows users, especially students, to use devices such as smartphones, tablets, laptops to access all online services

provided such as CampusOnline, elearn@USM, student email and others. Users can log in to the wifi facility provided using identity@USM.

For TM subscription alone, USM spent more than RM8 million for two years. This also shows USM's high commitment to providing the best Internet connection for students and staff.

USM's ICT policy describes the University's policy related to the management, use, service and security of USM's ICT resources as well as the rights, responsibilities and actions of the relevant responsibility center or department. While the Information and Communication Technology Security Guidelines define the need to maintain security levels minimum for the IT system used to support operations at the university, and subject to periodic review.

USM is also ISO/IEC 27001:2013 (Information Security Management Systems) certified since 2018. Conformity with ISO/IEC 27001:2013 means that an organization or business has put in place a system to manage risks related to the security of data owned or handled by the company, and that this system respects all the best practices and principles enshrined in this International Standard. USM is in the process of upgrading this certification to ISO/IEC 27001:2022.

Network traffic is monitored and filtered by security appliances and software to prevent hazardous attempts. For this purpose, USM subscribes to FortiGate and FortiAnalyzer software and hardware. USM also provides Blended Learning Guideline and e-Learn@USM Guide which also have the privacy and data organization guideline for teaching and learning. IP protections guideline also provided for staff or researcher that develop innovations of TEL instructions/product for teaching, learning and assessment.

Content Development	**Score: 4.25**

Description: Availability of both infrastructure and human resource support for digital content development is crucial for effective TEL implementation.

There is a centre studio provided by CDAE to all staffs at USM main campus as well as studios in health campus and engineering campus. In these studios there are facilities such as camera, desktop, ring light, greenscreen, lightboard, laptop, software and apps for editing. Moreover, several schools in USM take their own initiative to set up mini studio of their own. USM also subscribe cloud-based software such as Microsoft 365, Adobe Suits and Panapto that allows academics to create digital content.

In USM, CDAE has the expert ID. In fact, in USM we have experts on ID in several schools and research centre such as PPIP, PJJ and PTPM. These centres offer ID related courses at undergraduate and postgraduate programs. Furthermore, the university through CDAE develops capacity building among academics in ID and educational technologies by providing structured training by experts in ID and relevance areas. Moreover, continuous support is available for academic in nurturing sustainable learning environment towards TEL through experts and peers involvement.

USM has strived to achieve target as in Dasar ePembelajaran Negara (DePAN) 2.0. As for 2023, USM has subscribed Microsoft 365 and Adobe Suits for all staffs and students providieng huge

cloud-based experience. USM also has its own moddle based Learning Management System called eLearn@USM that is accessible to all academics and students. Besides, for MOOCs and Microcredentials agenda, USM has OpenLearning and Learnig4Life platform. In addition, USM provides structured trainings for the academics on using Web 2.0 tools that may be used for TEL.

As a higher education institution, USM has a dedicated centre called the Centre for Development of Academic Excellence (CDAE) to deliver effective and impactful programmes as well as the latest educational technology tools to support TEL experiences. In fact, USM is following DePAN 2.0 (governance). In USM, the open resources platform provided such as oer.usm, opencourseware and MOOCs.

Documentation	Score: 4.25

Description: There is adequate documentation in the form of guidelines, handouts, and manuals available (online/offline) for use by the stakeholders.

USM has excellent mechanisms available in terms of guidelines and feedback provided by CDAE by email, phone and face-to-face interaction. Lessons learned are only accessible to those in position and access. These would be like officers at CDAE, VC, Deputies of VC, Dean, Deputy deans etc. Lecturers with no position and power would not have access to the relevant data.

The workflow and responsibilities are available but not documented fully. Each lecturer would know 'how' as it is something that they have been doing all these years (through training and mentoring and advice from seniors). They would not know 'what' and 'where' to find such information, unless they seek rigorously from individuals with access and position.

Organisational Culture	Score: 4.0

Description: The organisational culture supports and fosters innovation, teamwork, learning and sharing to strengthen TEL.

Many academic staff in USM are passionate in learning new skills related to TEL based on the participation in TEL related training offered by CDAE.

Trained academic staff is appointed at each school/centre to assist the development of TEL at the school/centre level. Expert IT support staff is available on demand within USM. CDAE provides assistance for in-house training to further support academic staffs.

Every year, USM organizes innovation competitions related to TEL as preparation for national and international level competitions. CDAE provides additional support available anytime through online video sharing platform. An online learning platform is provided to facilitate and enhance the learning experience for students and educators.

To encourage innovation in TEL, the institution introduced award to honour academics that champion in TEL. Some academics applied for IP on innovations related to TEL. To foster innovation in TEL, USM proposed completion of Micro-credential/MOOC as requirement for promotion exercise.

Leadership	Score: 4.0

Description: Leaders in the organisation are enthusiastic about TEL and support an evidence-based approach to decision making in relation to technology adoption.

USM leaders will be directly involved to ensure MOHE initiatives are realized such as Hybrid learning. In addition, USM management also produced online assessment guidelines during the Covid19 pandemic.

CDAE plays an important role in ensuring training, monitoring and quality assurance for technology development & teaching at USM. A special budget for the purchase of technology that is 'metaverse' as well as ensure that technology development can support the latest teaching technology development. Ensure innovative quality academic programs for global audience.

Incentives for programme improvement through the provision of the latest technology. Applying AI in teaching, providing an environment for ODL and credit transfer for MOOCs and micro-credentials.

Human Resource training	Score: 3.33

Description: Human resources are treated as key in delivering quality teaching and learning using technology. Staff training to strengthen the adoption of TEL is a regular feature in the institution's professional development programmes.

CDAE provides TEL trainings conducted by qualified staff for all academic staff. In addition, each faculty also provides in-house TEL trainings conducted by qualified staff for academic staff, especially for new academic staff.

Academic staff are required to attend these trainings as part of their continuing professional development (functional competency). CPD points (MyCPD point) are given for annual appraisal. CDAE provides intermittent TEL trainings for all academic staff. However, trained academic staff may not reattend similar TEL trainings regularly, they may reattend after a while for updates.

Academic staff will attend intermittent TEL trainings provided by faculty. Supporting staff receive much less TEL trainings from PTI. They receive more trainings on technologies in administration.

There are very limited number of instructional designers and technology support staff available to support the design and development of TEL curriculum and digital content. Existing staff can only provide support for about 10% of groundwork or backend technical support. Academic staff have to resolve any field-specific instructional design issues and complete the digital content production tasks on their own. Some faculties outsource the development of digital content due to inadequate TEL support.

There is very limited support to help academic staff develop digital content for TEL delivery. Most academic staff have to complete the digital content production tasks on their own after attending trainings. Some faculties outsource the development of digital content due to inadequate TEL support.

The IT staff members are qualified, and they receive relevant training to provide backend support to academic staff.

TEL Champions	**Score: 4.75**

Description: The existence of a group of teachers to champion TEL initiatives helps create a supportive environment for the adoption and scaling up of different technologies.

CDAE formation was key in the appointment of early adopters as trainers to promote TEL in USM. Competitions were used as platforms to acknowledge early adopters' contributions to the new agenda. Support in terms of technical and funding was also provided to the different schools and centres to encourage and drive TEL. This is an attempt to empower the different schools and departments to adopt TEL.

There are a few academic staff from CDAE, the School of Management & School of Education who are passionate in sharing and teaching their knowledge and skills to promote TEL in USM. There are a few from other schools who are champion TEL in USM but not as active as those mentioned above.

Many USM lecturers are pioneers in innovation in teaching and learning. Every year, USM lecturers participate in innovation competitions in teaching, and some of them win awards at the national and international levels. This university also organizes innovation competitions in teaching. These competitions serve as a catalyst for lecturers to innovate and, consequently, become pioneers in the best teaching methods.

There are many research papers published. However, the research mainly focusing on students' perception on using certain TEL tools but still lacking on pedagogy used for teaching. Research for innovation and improvement in pedagogy is needed to enhance TEL in USM. These champions also lack leadership in research because they are not the lead authors, most of the time.

Key Observations from the Report

The overall score of 3.8 on a scale of 5 shows that USM is very well placed to increase the quality and effectiveness of TEL and has a number of key growth areas. The TEL benchmarking team at USM thus identified several recommendations in the USM TEL Action Plan to make further progress with TEL implementation (see Annex-C). There is also good buy-in to these from the senior leadership at USM. The key areas at USM to celebrate are: Technology-enable Learning (TEL) champions, IT Support, and Content development. However, USM could further improve TEL implementation by focussing on the following growth areas:
- Strategic Plan
    - Formulation of a dedicated TEL strategic plan
    - Communication of TEL strategic plan
    - Establishment of TEL measurable objectives at all levels of functions within the University
- Policy
    - Reviewing the university e-learning Policy (DePUSM) drafted in 2011

- o Approval and endorsement of updated USM e-learning Policy (DePUSM)
  - o Sharing and communicating the DePUSM policy, as well as conducting an awareness survey to USM community
- Human resource training
  - o Prioritize TEL training for supporting staff to bridge the training gap. Consider reskilling or upskilling technical supporting staff to support TEL.
  - o Explore avenues for expanding the capacity for TEL curriculum and digital content development, such as hiring additional instructional designers and/or partnering with external experts or universities.
  - o Evaluate the feasibility of expanding the existing TEL support department to better serve teaching staff's content development needs. This includes the expansion of human resource and digital facilities such as AI and teaching aid applications.
  - o Encourage collaboration between teaching staff and support teams to share knowledge and resources for digital content development.
  - o Continue to nurture the trust and collaboration between teaching staff and instructional designers/technology support staff to enhance TEL initiatives' effectiveness.
  - o Maintain a focus on ongoing training and skill development for IT staff to ensure robust backend support for TEL.
  - o Provide lecturers with TEL skills and competencies development support such as training workshop in using digitals tools application and learning platform for teaching and learning for blended learning/hybrid learning/MOOC/Micro-credential.

Annex-A: The USM Benchmarking Team

1. Policy
Dr Irfan Naufal Umar (Professor) **(Leader)**
Dr. Rohayati Mohd Isa (Senior Lecturer)
Dr. Aziah Binti Ismail (Associate Professor)

2. Strategic Plan
Dr Azhar Mat Esa (Professor) **(Leader)**
Dr Anusha A/P Achutan (Senior Lecturer)
Dr Norehan Binti Mokhtar (Associate Professor)

3. IT Support
Dr Yusri Yusop (Associate Professor) **(Leader)**
Dr Mageswaran A/L Sanmugam (Senior Lecturer)
Mr. Ahmad Fadhlul Irham (ICT Director)
Mrs. Norzila Manap (IT Officer)
Ms. Nurul Syafika Nadiah Mohd Zabaruddin (IT Officer)

4. Technology Applications
Dr Wan Ahmad Jaafar Wan Yahaya (Professor) **(Leader)**
Dr Siti Zuraidah Md Osman (Senior Lecturer)
Mr. Mahadi Yusof (ICT Deputy Director)

5. Content Development
Dr Nik Hadiyan Nik Azman (Senior Lecturer) | **(Leader)**
Dr Norazizi Nordin (Senior Lecturer)
Dr Aidiahmad Dewa (Senior Lecturer)

6. Documentation
Dr Kamarul Kabilan Abdullah (Professor) **(Leader)**
Ts. Dr. Mastura Azmi (Senior Lecturer)
Dr Mohd Salman Abu Mansor (Associate Professor)

7. Organisational Culture
Dr. Mageswary Karpudewan (Professor) **(Leader)**
Dr Nor Azlina Mohamed Mokmin (Senior Lecturer)
Dr. Izzal Asnira Zolkepli (Associate Professor)

8. Leadership
Dato' Dr. Ahmad Farhan Mohd Sadullah (Professor) **(Leader)**
Dr Andrew Tan Khee Guan (Professor)
Dr Irwan Mahazir Ismail (Senior Lecturer)

9. Human Resource Training
Dr. Chua Hang Kuen (Senior Lecturer) **(Leader)**
Dr Ema Izati Zull Kepili (Senior Lecturer)
Dr. Radziah Adam (Senior Lecturer)

10. Technology-Enabled Learning Champions
Dr Lilis Surienty Abd Talib (Associate Professor) **(Leader)**
Dr Chin Yee Whah (Professor)
Dr Muhd Al-Aarifin Ismail (Senior Lecturer)

Annex-B: Interviews conducted by the Consultant

1. Professor Dato' Dr Narimah Samat, Deputy Vice-Chancellor (Academic and International) of Universiti Sains Malaysia

2. Professor Dato' Dr Faisal Rafiq Mahamd Mdikan, FASc, CIO of USM

3. Dato Bahari Belaton, Dean, School of Computer Science

The key contacts at USM, Associate Professor Dr Azidah Abu Zidden and Associate Professor Dr. Jamalsafri Saibon attended the interviews and consolidated the feedback to the teams.

Annex-C: USM TEL Action Plan

Important:

1) *These are some of the key actions identified by the USM staff.*
2) *All figures estimated are not reviewed/verified.*

	From When (month and year)	By when (month and year)	By who	With what resources *(technical and monetary)*	Indicators of success (quantify where possible)
1. Policy					
1. Reviewing the university e-learning Policy (DePUSM) drafted in 2011	01/24	08/24	CDAE, PPKT, DVC Academic & International.	CDAE & PPKT panel of experts	Reviewed version of DePUSM
2. Approval and endorsement of updated USM e-learning Policy (DePUSM)	09/24	12/24	CDAE, DVC Academic & International, Univ Management Committee (JKPU), Legal Office	Legal office team, JKPU members	An approved and endorsed version of DePUSM
3. Sharing and communicating the DePUSM policy, as well as conducting an awareness survey to USM community	01/25	12/25	CDAE, DVC A&A Office	CDAE team, funding from Academic & International Office	Number of access / downloads from USM Legal Office website. Awareness survey result
a. **2. Strategic Plan**					
4. Formulation of a dedicated TEL strategic plan	Jan 2025	End Feb 2025	Vice Chancellor	VC's office human resources	Approved minute in senate of USM TEL Policy
5. Communication of TEL strategic plan	March 2025	End March 2025	VC's annual address; University's communication channels	University's MPRC, Technical support	Content of VC's annual address on TEL policy; visual communication (wall posters, website etc), 100 % awareness of TEL policy among USM academic staffs.
6. Establishment of TEL measurable objectives at all levels of functions within the University	April 2025	End Jun 2025	VC, Deputy VC, Deans, and directors	School and centres administrative staffs	100 % awareness of existence of objectives among staff members of schools and centres
3. IT Support					
5. Streamline coordination between Pusat Pengetahuan, Komunikasi dan Teknologi (PPKT) and the Centre for Development and Academic Excellence (CDAE) for efficient teaching technology distribution and improved support across Universiti Sains Malaysia campuses.	Jan 2024	Jun 2024	CDAE and PPKT	Human resources of CDAE and PPKT	One document that specifies the job scope of the inter-department framework. This could be captured in an updated TEL/e-Learning Policy
6. PPKT to increase communication with USM's top management to support the USM Digitalization Strategic Plan as it pertains to TEL.	Jan 2024	Dec 2024	PPKT	PPKT Management	Meeting minutes that prove the increase in communication activity.
7. Implement specific technology management system dashboards in order of importance: 1)	Jan 2024	Jun 2025	PPKT	PPKT Management and contractors that would	Systems in handling the development and management of technology, such as

	From When (month and year)	By when (month and year)	By who	With what resources (technical and monetary)	Indicators of success (quantify where possible)
project management, e.g., digital learning resources, 2) digital management, e.g., website design, application development, and 3) infrastructure management, e.g., networking, cybersecurity."				incur an estimated cost of RM1 million.	website design and application project dashboards.
4. Technology Applications					
8. Audio Visual Facelift facilities for teaching and learning for lecture halls and tutorial room.	Jan 2024	Dec 2025	Centre for Instructional, Technology and Multimedia	RM 2.9 mil	Upgraded lecture halls and tutorial room
9. Development and application of AR and VR	Jan 2024	Dec 2024	Centre for Instructional, Technology and Multimedia	RM 1.1 mil	Metaverse lab development
5.Content Development					
10. University needs to provide more apps and tools to be used by lecturers to enhance their content development e.g: Canva, Screencast-o-matic, Mentimeter, Genially, Padlet	Dec 2023	Dec 2030	University, CDAE, PPKT	Applications/Tools	Each PTJ got 5 Apps to used
11. Expert Instructional Designer (ID) need to be dedicated towards specialised area such as designs learning activities, assignments, and assessments. Creates computer-based training (CBT) modules and storyboards. Develops instructor's manuals, rubrics, and other teaching tools. Collaborates with subject experts to develop course content.	Dec 2023	Dec 2025	University, CDAE, HR	Technical	Each PTJ should have 1 ID
12. Initiative needs to be given to lecturers in producing digital content such as short-term grant in MC/MOOCs so that lecturers have motivation to do creative content development.	Dec 2023	Dec 2025	University, RCMO	Shor term grant	By 2024, 50 lecturers have this grant
6. Documentation					
13. Create good documentation in help mechanisms to support teachers and students.	2024	2026	PTJs, CDAE	PTJs	Documentations of help mechanism for teachers and students
14. Improve process of documentation at all PTJ's level by providing portal online and easy access; including a documentation management system for TEL at the university level.	2024	2026	PTJs, PPKT, CDAE	PTJs team, portal online by PPKT/CDAE	All PTJs have documentation and access to documents
7. Organisational Culture					
15. Provide access (and continued access) to Technology Enhanced Learning resources. 1. Learning Management System (E-Learning platform), 2. Online courseware(either create own platform or use available platform such as Open	January 2024	December 2026	CDAE	Technical support by PPKT, Monetary by USM	By 2024, all lecturers use the E-Learning platform for their courses.

From When (month and year) By when (month and year) By who With what |

	From When (month and year)	By when (month and year)	By who	With what resources *(technical and monetary)*	Indicators of success (quantify where possible)
Learning), 3. Open Educational Resources (Such as MOOC), 4. Video conferencing platform (WEBEX, Panopto, Microsoft Teams and GoogleMeet), 5. Learning Analytics Tools (embedded in E-Learning platform), 6. Cloud storage and collaboration tools (Microsoft 365), 7. Content creation tools (Such as canva, genially, padlet)					resources (technical and monetary) Indicators of success (quantify where possible) 2. By 2024, 100 academics use video conferencing platform provided by USM.
16. Foster innovation in TEL, proposed completion of Micro-credential/MOOC as requirement for promotion exercise.	2024	2026	USM	Technical by CDAE	Anugerah Pendidik Sanjungan (Award to appreciate champion in TEL)
8. Leadership					
17. Preparation of technological equipment and pedagogy	January 2024	December 2026	VC, TNC, CDAE, PPKT & PTPM, Treasurer	VC, TNC & Treasurer-Incentive & Policy PTPM & PPKT – Equipment CDAE & PPKT-Pedagogy Resource - Infrastructure/Training/ Incentive	30% Percentage of incentive apply by staff.
18. Cultivating the application of technology and pedagogy.	January 2024	December 2026	VC, TNC, CDAE, PPKT & PTPM,	Policy PTPM & PPKT - Equipment Training CDAE, PPIP & PTPM-Pedagogy Training Integrate innovative teaching methods with the latest educational technology tools and provide training incentive for staff	50% Percentage of incentive apply by staff
19. Increased use of technology and pedagogy and incentives.	January 2024	December 2026	CDAE, PPKT & PTPM,	Incentive & Policy PTPM & PPKT - Equipment CDAE, PPIP & PTPM-Pedagogy training	Promote Incentive & motivation and competition and innovation 15 % staff join competition and innovation 2% Produce Product Commercialist by staff 75% Percentage of incentive apply by staff.
20. Sustainability of use and improvement of the quality of use of technology and incentives	January 2023	December 2026	CDAE, PPKT & PTPM,	Guideline by VC, TNC & Treasurer- Incentive &	10% Give training of the technology through education and training, staff

	From When (month and year)	By when (month and year)	By who	With what resources *(technical and monetary)*	Indicators of success (quantify where possible)
				Policy PTPM & PPKT - Upgrade system promote and commercial. CDAE, PPIP & PTPM- Promote New Pedagogy Approach and Incentive	promotion, incentive and globalise. 2% Produce Paten and Commercialism by staff 100% Percentage of incentive apply by staff
9. Human Resource Training					
21. Prioritize TEL training for supporting staff to bridge the training gap. Consider reskilling or upskilling technical supporting staff to support TEL.	Jan 2024	Dec 2026	Pusat Transformasi Insan (PTI)	PTI training fund/TEL Trainers in USM	No. of TEL training for supporting staff and attendance. Availability of supporting staff to support digital content development. The reduction of self-help digital content development by academic staff and outsourcing. The increase of confidence level of academic staff towards support staff.
22. Explore avenues for expanding the capacity for TEL curriculum and digital content development, such as hiring additional instructional designers and/or partnering with external experts or universities.	Jan 2024	Dec 2026	Bahagian Sumber Manusia, CDAE & PTJ	USM's emolument fund/shared resources	Availability of subject-specific ID. Mou/MoA on TEL development or instructional leadership.
23. Evaluate the feasibility of expanding the existing TEL support department to better serve teaching staff's content development needs. This includes the expansion of human resource and digital facilities such as AI and teaching aid applications.	Jan 2024	Dec 2025	PTI	USM's emolument fund/**Create TEL fund** (if not available)	Availability of ID and frontend IT and digital content support staff for TEL. Subscription to AI and essential teaching aid applications.
24. Encourage collaboration between teaching staff and support teams to share knowledge and resources for digital content development.	Ongoing		PTI	PTI training fund / TEL Trainers in USM	The reduction of self-help digital content development by academic staff and outsourcing. The increase of confidence level of academic staff towards support staff.
25. Continue to nurture the trust and collaboration between teaching staff and instructional designers/technology support staff to enhance TEL initiatives' effectiveness.	Ongoing		CDAE & PTI	Using Existing resourcces	The increase of confidence level of academic staff towards support staff.
26. Maintain a focus on ongoing training and skill development for IT staff to ensure robust backend support for TEL.	*Ongoing*		PPKT	Using existing resources	Effective and timely backend support for TEL

	From When (month and year)	By when (month and year)	By who	With what resources (technical and monetary)	Indicators of success (quantify where possible)
27. Provide lecturers with TEL skills and competencies development support such as training workshop in using digitals tools application and learning platform for teaching and learning for blended learning/hybrid learning/MOOC/Micro-credential.	Jan 2024	Dec 2024	CDAE/School	Workshop/Training	Increase in the number of using e-learning platform for teaching and learning, MOOC courses and Micro Credential modules
10. TEL Champions					
28. Recognising leaders among the teachers in developing appropriate TEL strategies and disseminate them to other teachers	Jan 2024	Dec 2024	CDAE HR- Kenaikan Pangkat. Sanggar Sanjung- TEL Champion	Funding for the award & competition. Budget for Increment allocation.	New TEL leader/year for each campus.
29. Identifying the different platforms (eg. Universities, Schools, Professional Association) for TEL players to get acknowledgement for their products (different expert levels-Novice, Experts) and sustaining continuity of the efforts. This includes non-academic TEL products that could expand the target audiences outside of HIEs and generate income.	Jan 2025	Dec 2025	CDAE. Schools. Professional Bodies-CIDB, Academy Science Malaysia (ASM), Board of Engineers (BEM), Malaysian Medical Councils (MMC).	1. Director of CDAE. 2. Studio Facilities for recordings (these are already in operation in all schools). 3. TEL Champions.	- competition at university level/year OR accountable to promotion. - award/year specifically to TEL efforts. - Product adopted to be used or promoted by the external bodies on their official organisation platform.
30. Developing more champions and integrate their TEL skills with pedagogy innovation and good practices.	Jan 2026	Dec 2026	Academics who are passionate about TEL.	- Research grants (RCMO, FRGS, etc.) - Small grants from Schools. - CDAE. - PPKT Data.	Developing more champions and integrate their TEL skills with pedagogy innovation and good practices. - Academics who are passionate about TEL. - Research grants (RCMO, FRGS, etc.) - Small grants from Schools. - 40 champions developed from 2023-2025. - 10 of research papers published related to TEL and pedagogy innovation. - 2 numbers of training conducted by each champion/year related to TEL. (can quantify via Penyelaras MC at each school)

21