D.1.1.

Analysis of existing modern distance learning platforms and smart labs models at the Programme countries HEIs

DISCLAIMER

PROJECT INFORMATION

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List of Abbreviations

Abbreviation	Meaning
D	Deliverable
EU	European Union
HE	Higher Education
HEI	Higher Education Institution
ICT	Information and Communications Technology
IO	Intellectual Output
LMS	Learning Management System
KA	Key Action
UN	United Nations
UL	UNIVERZA V LJUBLJANI – University of Ljubljana
UM	UNIVERSITA TA MALTA – University of Malta
UPM	UNIVERSIDAD POLITECNICA DE MADRID – University of Madrid

INTRODUCTION

The world leaders of the UN member states in September 2015, unanimously adopted the 2030 Agenda for Sustainable Development (UN 2030 Agenda) in the UN General Assembly. The agenda includes 17 goals, 169 targets and 244 indicators for progress measurement. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental. Particularly important for project SMARTEL is Goal 4: to provide inclusive and quality education for all and to promote lifelong learning.

The relevant ministries in EU candidate and in EU neighbourhood countries have adopted educational development strategies in recent years, which provide guidance on how to improve teaching by applying ICT in accordance with the Goal 4 of the UN 2030 Agenda.

The overall objective of project SMARTEL is to improve the teaching process at the HEIs in the Region 1 (Kosovo UN Resolution 1244, Montenegro, Bosnia and Herzegovina) with a special emphasis on enabling the access to a quality teaching process for students who, for objective reasons, cannot attend regular teaching activities at HEIs.

The project goal is using of modern ICT technology and pedagogical approaches to promote equity to the students with: a) disability, b) economic obstacles: people with a low standard of living, low income, dependence on social welfare system and c) geographical obstacles: people from remote or rural areas; people living in small islands or in peripheral regions;

Expected results of project SMARTEL are:

- implementation of modern distance learning platforms,
- creation of e-content for multimedia platforms,
- equipping the remote and central office classrooms with modern ICT technology for teaching (smartclassroom),
- developing new pedagogical approaches that define the use of ICT in education,
- training of teaching and technical staff.

Project SMARTEL will impact on the improvement of equity in the teaching process at HEIs in Region 1.

1 WORK PACKAGE 1 – ANALYSIS

Work Package 1 (WP1) of project SMARTEL seek to identify and analyse the models of existing distance learning platforms and smart labs at higher education institutions (HEIs) in the Programme and Partner countries. Special attention is paid to the applications that help vulnerable groups (people with disability and with economic and geographical obstacles) to attend lectures in an appropriate way for them.

The analysis is done for each institution in particular, and then the results will be integrated into: one joint report for models in the Programme countries (D1.1) and one joint report for models in the Partner countries (D1.2). The reports will also include information of laboratory structure and classroom settings for teaching, distance learning, application of hardware and software in a modern presentation of teaching materials, ICT application for students with special needs.

The differences in applied models will be studied and recommendations for improvements in setting up the appropriate models will be generated for each Partner country HEI. The similarities and differences between the teaching models will be presented in a comparative report (D1.3). It will be analysed which key elements from distance learning platforms and smart labs model for teaching in the Programme countries HEIs should be applied in models for teaching in Partner countries HEIs in order to meet needs of students that belong to vulnerable groups. Comparison of these teaching models will be presented in the joint report.

1.1. Methodology

This research was conducted through a questionnaire which was circulated among partners at the beginning of SMARTEL project. Data collection took place in February and March 2021. All data are self-reported.

Questionary investigated the existing modern distance learning platforms and smart labs models by inquiring eight (8) units: E-learning organization; Learning Management Systems; Videoconferencing; Collaborative platforms; Exams and Knowledge assessment platforms, proctoring systems; Multimedia learning material storage (repository); E-learning, online learning accredited study programs and E-learning enhancements for the students with disabilities. Educational, technical and executive aspects and follow-up mechanisms adopted were taken into consideration.

The report offers insights from the most current view of online education in HEI from Programme Countries involved in the SMARTEL project, namely University of Madrid - UNIVERSIDAD POLITECNICA DE MADRID (UPM), University of Malta - UNIVERSITA TA MALTA (UM) and University of Ljubljana - UNIVERZA V LJUBLJANI (UL). Their full contributions may be found in the Annexes to the report.

2 KEY FINDINGS

2.1. E-learning organization

Under this section, project partners were asked regarding the organisation of e-learning in their institutions. In particular, they have been asked regarding the existence of a specific e-learning strategy, presence of dedicated services and staff responsible for e-learning at both university and faculty level, and the quality assurance measure for e-learning (guidelines, methodologies, recommendations).

All HEIs have specific **official strategic documents referring to e-learning**:

- UPM bases the digital education activity on its Cabinet for Tele-Education GATE, which has a specific Service Chart and an annual strategy document;
- UM has an official Distance and e-Learning policy including quality assurance standards and measures which is connected to other internal policies whose content is relates (IPR, copyright, plagiarism, capture, etc.);
- UL doesn't have a specific strategy document for digital education as digital education is embedded in the pillars of the new university strategy 2021-27.

The services and staff **responsible for e-learning are different**:

- UPM relies on its Cabinet for Tele-Education GATE, university support service for the integration of information and communication technologies in teaching. GATE is part of the Vice-Rector's Office for Digital Strategy and Transformation.
- E-learning in UM is managed mainly by the IT Services, under supervision of a Digital Education Committee, responsible for the e-learning policies and strategies of the institution;
- In UL, the responsible entity is the Digital University Center (CDiUL), which is responsible to the UL Secretary General; it works in close connection with the different IT departments and UL services.

These entities have dedicated staff and are responsible for technical infrastructure management and assistance as well as consulting to interest parts, while the pedagogical aspects remain decentralised and rest in faculties and professors. However, all institutions have a set of comprehensive guidelines and recommendations available to support staff in meeting quality standards and ensure the best educational performances.

2.2. Learning Management Systems (LMS)

Under this section, project partners were asked regarding their Learning Management System and its management specifics as well as the percentage of courses, subjects and teaching staff of the institutions covered and the integration of the LMS with existing information systems. HEIs were asked to rate the level of complexity of their LMS use, three levels (3) were defined: basic, intermediate, and advanced.

All HEIs declared their **main LMS is** Moodle (only in UL one full member of the institution is using Canvas). Moodle – acronym for *Modular Object-Oriented Dynamic Learning Environment* is an Open Source LMS, freely provided, working well in all standard, modern browsers and different operating

systems. It can be customised in any way during course creation and its users need basic web browsing skills to use it. It is proven and trusted worldwide by academic and enterprise level institutions and organisations being the world's most widely used learning platform.

The **complexity level** varies among institutions:

- UPM: Intermediate – electronic learning materials + quizzes for students;
- UM: Advanced – performing team work, collaborative work, seminars, regular monitoring of students' progress;
- UL: Between Basic - putting electronic learning material for the students and Intermediate.

The **number of LMS and their utilisation rate** vary according to the HEIs organisation and have been affected by the recent COVID-19 pandemic situation[1]:

- In UPM, before the pandemic the LMS use reached almost 50% of subjects and professors, while now it has been boosted by situation and 75-90% of subjects and staff are covered.
- Similarly, in UM, the LMS use was basic and has been boosted by the pandemic reaching 75-90% of course subjects ad staff are covered.
- In UL, 50%-75% of all faculties and art academies are using LMS: 10 entities reached 100%, while 2 art academies barely reach 25%. The CDiUL maintains more than 5 different Moodle LMS (not all integrated in student information system), while others are managed by teaching staff.

2.3. Videoconferencing (remote or online lectures, laboratory work, auditoria work)

This section investigated project partners' use of videoconferencing software in teaching, especially regarding current practice of use, availability and storage of recordings. This section's results are impacted by the pandemic: most of currently used systems were already in use in the HEIs before the pandemic but with different aims (example for specific events or to perform simultaneous teaching in different campus). For those teachers whose courses had not an online learning component, it was a big change of paradigm.

The **most used tools** in the three 3 HEIs are Zoom (for academic staff) and Microsoft Teams (for both academic staff and students). Other mentioned conferencing system are BigBlueButton – a free web for Linux servers (UM, UL), Cisco Webex (UL) and Blackboard Collaborate (UPM) – which goes beyond simple video conferencing and allows some collaborative work. In some cases, Zoom and BigBlueButton have been integrated in Moodle. **Licenses** usually cover all academic staff and activities are conducted in meetings mode, with teachers and students present with both video and audio).

[1] The World Health Organization declared a Public Health Emergency of International Concern on 30 January 2020 (Source: Second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV), https://bit.ly/36vi0wd) and a pandemic on 11 March 2020 (Source: WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020, https://bit.ly/3jwor5S)

Videoconferencing has become one of the ordinary means of communication with students, replacing almost all classroom-based training during the pandemic. For this reason, HEIs reported most of the teachers performing activities from their houses, even when offices, cabinets or dedicated conference suites were available to them in the institution. For courses where physical activities were necessary, a hybrid (blended) approach was adopted and the more their main components were physical (drama, dance, music, design in particular) the more adjustments were necessary for course activities to be maintained.

When it comes to **recording of lectures**, results depend on internal policies and of course the availability of a multimedia repository: so, UM makes recordings only for those courses allowing part-time students and keep them in online depositories, while UPM allows teachers to record themselves and has multiple repository systems (from YouTube to dedicated Digital Archives). UL is still piloting repository systems and at the end of this phase the number of recorded lectures, which is now about the 10% in the entire institution, is expected to grow.

As for the **future of videoconferencing**, vision is different among the HEIs:

- UPM sees classroom-based training as its seal of identity of UPM and face-to-face (F2F) training is the essence of Spanish university system, so hybrid (blended) learning will be kept only for a minimal part of the UPM courses (mainly Master courses) or as a last resource.
- In UM, all courses are currently using videoconferencing for lectures. Those courses which already had an online learning component will keep it at the end of the pandemic.
- UL will maintain a hybrid (blended) learning approach with combination of traditional, face-to-face learning methods with technology-based online learning methods approach, in simultaneous teaching, meaning that teachers will teach online and in-person at the same time.

2.4. Collaborative platforms

Regarding **collaborative platforms**, meaning by this term any virtual workspace where resources (information, files, data) can be stored and which eventually provides tools to facilitate communication, interaction and shared work, there are differences in the three (3) HEIs:

- In UPM, individual accounts of 75 GB of cloud storage are provided in the so-called UPMdrive for all staff, but no collaboration tools are provided in it.
- UM mainly relies on Google Workspace which includes tools for cloud computing, productivity and collaboration tools (Gmail, Google Calendar, Google Drive, Google Docs, Google Meet)
- UL mainly relies on its LMS systems and additionally all teachers have licensed access to Microsoft applications such as Office365, Microsoft Teams, OneDrive. Teachers also use free solutions like the Google Workspace Suite or DropBox. It is acknowledged that technological optimization is required in this sense.

2.5. Exams and Knowledge assessment platforms, proctoring systems

As for **validation of students learning and performance**, HEIs were asked regarding the way examinations are conducted in a context of distance learning and related regulations and guidelines for students and teachers:

- In UPM, written exams were mostly carried out through the LMS Moodle (questionnaires, scanned exams), when visualisation of students was necessary, for written or oral exams, the videoconferencing tools (Zoom, Microsoft Teams or Blackboard Collaborate) were used. A specific "Guide of non-presential evaluation" has been created and made available to staff.
- UM's official online examination system is WiseFlow, a cloud-based exam and assessment platform which allows to create, deliver and assess multiple types of exams and assessment, accompanied by tools for feedback, analytics and security. All academic staff doing online exams has been trained to the platform by the UM IT Services.
- UL employs the platform Exam.net and Safe Exam Browser, both available to all teachers and students (via exam code). The platforms allow oral and written exams and comply with the institution needs for plagiarism prevention, as they prevent navigation or unauthorized resources being used during an exam. Also, a set of recommendation for oral and written exams has been prepared by academic staff and management. Nevertheless, there is a certain complexity in managing large numbers of students attending exams through these systems.

The general trend is to return to face-to-face mode once the pandemic is over and keep online examination systems for continuous evaluation activities.

2.6. Multimedia learning material storage (repository)

In relation to recording lecturers and need for them to store learning resources, HEIs have been asked if their institutions have provided them with a dedicated **repository space** or if the system has been decentralized.

- UPM digital services include a wide range of systems starting from the UPM Digital Archive – UPM's institutional repository which is up to international standards and protocols. Beside this system, digital materials (video, audio, animations, text, images, etc.) which are part of the course teaching activities can be stored in the Politécnica Digital Collection. In both systems, materials can be restricted or open access. Other teaching resources and activities are kept on the UPM LMS Moodle, which is restricted to UPM staff and students. Besides, web space OpenCourseWare OCW-UPM contains standardised teaching materials which are offered in open access. Academic, institutional and educational videos can also be uploaded in the UPM Youtube channel.
- For security reasons, UM does not rely to private commercial entities for storage of academic contents, and has provided space in its servers to host multimedia learning materials embedded in LMS Moodle and other services.
- As reported in the Videoconferencing section of this report, UL is currently piloting repository systems in order to identify the most suitable system allowing big files storage, meta data, transcoding and streaming capabilities, asset as well as content access management and integration with the back-end systems. Piloted systems include the Microsoft Suite, Mediasite, Avideo, Panopto and MiTeam. Meanwhile the piloting phase is carried out, academic staff use OneDrive, since all teachers have license, or free repositories at teacher's choice.

2.7. E-learning, online learning accredited study programs

When looking to **accredited e-learning program** in the three (3) HEIs, results show that a total web-based education is not yet available in an of the institutions for different reasons:

- As explained above, classroom-based training is the essence of Spanish university system, so in UPM e-learning is mainly seen as a last resource tool for education and training. Consequently, there are no Bachelor Degree courses (EQF 6) which are officially totally on e-learning and the hybrid (blended) learning will be kept only for some Master courses (EQF 7), which already are in transitioning towards being fully in e-learning.
- UM academic offer already has 6 courses in hybrid (blended) learning or full e-learning. These courses are for part-time students only, which benefit from access to recordings of lectures (thus allowing asynchronous learning).
- UL has accredited study programs in hybrid (blended) learning (50%-50%), but does not have accredited programs which are fully on e-learning.

2.8. E-learning enhancements for the students with disabilities

Last category of the questionnaire investigated how HEIs faced the issue of **accessibility for students with varying impairments or disabilities**. For all HEIs, it has been difficult to develop e-Learning contents that satisfy the different needs of different learners.

- At UPM, accessibility is taken into consideration for the LMS, but there are some difficulties with accessibility of uploaded resources and activities. In this perspective, Ally for Moodle is being tested: Ally solution verifies the uploaded content in respect with common accessibility issues and provides guidance and feedback to teachers to help make their content more accessible. Alternative accessible formats include Semantic HTML, audio, ePub, and electronic braille.
- UM has no systems in place to meet needs of diverse learners, as there is no requirement for their LMS and Virtual Learning Environment (VLE) to meet accessibility criteria.
- As for UL, the current support system is mainly based on mentoring. In close cooperation with Slovenian Association of Disabled Students, a dedicated working group is addressing digital learning enhancements for students with special needs, including development of suitable digital learning methods.

ANNEXES

University of Madrid (UPM)

E-learning organization in your institution

do you have any e-learning strategy document prepared on the university level or on the faculty level;
if not, is e-learning mentioned in your existing strategies;
do you have a person responsible for e-learning, on the university level (e.g. vice-rectors) or on the faculty level (e.g. vice-deans);
do you have any department on the university level dealing with e-learning;
do you have any guidelines, methodologies, recommendations in written form for e-learning performance?
who is responsible for technical aspects of e-learning (setting up platforms, maintenance); does your IT department have dedicated personnel for e-learning?

At the Technical University of Madrid UPM (Universidad Politécnica de Madrid), there is the Cabinet for Tele-Education GATE (Gabinete de Tele-Educación) which is a university support service for the integration of information and communication technologies in the teaching. The GATE forms part of the Vice-Rectorate for Digital Strategy and Transformation and it is currently composed of 23 permanent staff members as well as 6 student interns. The GATE operates in the following directions:

- Online teaching: management of the platforms y formation of teachers,
- Audiovisual services for teaching,
- Technical and teaching assistance for the use of the teaching technologies, and
- Service for virtual laboratories to emulate teaching practices.

The activities of GATE are based on the Service Chart published in the Official Bulletin of Madrid Region (BOCM - Boletín Oficial de la Comunidad de Madrid) and on the annual strategy document with objectives for the current year (http://serviciosgate.upm.es/gate/). Also, t GATE's Web site there is a lot of resources which are categorized in guides and manuals for tele-teaching (Moodle, Online courses, Non-presential evaluation), educational ICT (Blogs, Augmented reality, Gamification, Mooc, Mobile learning, etc.), Audiovisual, Virtual Laboratories and others.

Learning Management Systems (LMS) in your institution

LMS are online platforms intended to store and deliver learning materials to students; students are grouped in LMS according to their study programs and subjects; LMS can be used to perform online learning process;
Are you using LMS? Which One?
What is the extent of use of LMS, how many subject/professors are present in your LMS (e.g. less than 10%, 10%-25%, 25%-50%, 50%-75%, 75%-90%, all subjects)?
What is the predominant complexity of the LMS use? Basic: putting electronic learning material for the students (eg. Lesson plans, PDF or PPT materials); Intermediate: electronic learning materials + quizzes for students; Advanced: performing team work, collaborative work, seminars, regular monitoring of students' progress, etc;
Who is administering your LMS? Is it a manual work (managing users/students/teachers/subjects or automatic)? Is your LMS integrated with any external information system?
Do your faculties use the same LMS or different ones, is there a systematic approach or is it left to faculties/departments/individual professors

UPM is using LMS, concretely Moodle. All subjects and professors are present in LMS, in the intermediate level of complexity. The LMS is administrated by the dedicated UPM unit, the above mentioned GATE. It is automatic work, without external system. All faculties use the same LMS in a systematic approach, however individual professors adapt it to particular circumstances.

Videoconferencing (remote or online lectures, laboratory work, auditoria work) in your institution

Do you use videoconferencing software for online lectures performance? Do you use it only because of Covid19 situation or is it part of your regular study process/will be part of your regular study process after Covid19?
Which videoconferencing tools do you use? Do you have licenses covered for all teachers?
To what extent do you use videoconferencing for your lectures in Covid19 situation (e.g. less than 10%, 10%-25%, 25%-50%, 50%-75%, 75%-90%, all subjects)? To what extent do you use it otherwise?
Do you use videoconferencing in the webinar mode (teachers present, students attend and participate in chat) or in the meetings mode (teachers and students present with video and audio) predominantly?
How do you perform remote lectures? Do professors perform them from their cabinets/home or do they perform them from the classrooms with some students attending the class and other being online (hybrid lectures)? Do you find the hybrid lectures interesting for your university?
Do you record your lectures often? Where do you store your recordings?
Do your faculties use the same videoconferencing or different ones, is there a systematic approach or is it left to faculties/departments/individual professors

UPM uses various videoconferencing tools like Zoom, Teams and BlackBoard Collaborate. The licenses cover all teachers. During the Covid19 lockdown the use of videoconferencing was used for all courses, however the presential education is seal of identity of UPM. The extent in which teachers perform the videoconferencing is in accordance with particular course politics. The hybrid lectures are interesting, however the presentiality is primordial for official courses. The lectures can be recorded deliberately by teachers on UPM Digital Archive, Politécnica Digital Collection, OpenCourseWare OCW-UPM, Tele-teaching platform Moodle, UPM Youtube channel, as explained in the forthcoming sections. The faculties use among above mentioned videoconferencing tools, Zoom, Teams and BlackBoard Collaborate, according to the agreements for particular lecture.

Collaborative platforms

Do you use any additional online platforms for online collaboration activities with students or to share some larger files…? e.g. Google drive, google other services, Dropbox…

UPM provides to its personal the individual accounts of 75 GB in the cloud, namely UPMdrive. However it is not particularly related to online collaboration activities.

Exams and Knowledge assessment platforms, proctoring systems

Do you perform oral or written exams online? How do you do it? Are you using Exam.net, or Safe Exam Browser in combination with LMS, or Exam.net/SEB in combination with LMS and videoconferencing tool for control, or just videoconferencing tools? Are you using any other proctoring system (to perform exams in the online safe environment)?

Due to the lockdown in the course 2019-2020 all exams were carried online, both those for continuous evaluation and those for ordinary and extraordinary calls. In the course 2020-2021, only the exams for continuous evaluation were carried out online. The general examination method is the use of Moodle tools, being questionnaires or scanned exams. Specific Moodle instances were used to support a great number of accesses. The exam.net was not used, neither any proctoring software nor navigator blocker (SEB/lockdown browser/…). In some cases, the visualization of students as well as student support were carried through ZOOM, TEAMS o BlackBoard Collaborate. Also, some exams were oral using ZOOM, TEAMS o BlackBoard Collaborate. The instructions to teachers are summarized in the “Guide of non presential evaluation” available at GATE Web site.

Multimedia learning material storage (repository)

Where do you store the video learning material you produce or other large files used in the learning process? Is there a systematic approach, or is it left to faculties/departments/individual professors? Is there a need for such repository at your university?

The UPM has a digital platform system with several objectives and characteristics, all of them complementary and non-redundant.

- UPM Digital Archive (http://oa.upm.es) UPM's institutional repository for open access academic and research content, prepared by members of the UPM only, aligned with other international repositories, which follows Dublin Core international metadata standard, the OAI-PMH protocol (Open Archives Initiative - Protocol for Metadata Harvesting), and Creative Commons open access licenses. This repository is included in the Cybermetrics Lab Web Ranking at CSIC.
- Politécnica Digital Collection (http://cdp.upm.es) Repository of digital objects (video, audio, animations, text, images, etc.) that may be open or limited to the UPM network. It may contain objects, managed in collections or virtual groups, prepared by members of the UPM, or other sources as long as they ar part of the teaching activity as working material between teacher and students. It follows the Dublin Core metadata standard and METS, for objects with complex relationships.
- Moodle tele-teaching platform (http://moodle.upm.es) Virtual classroom, organized by subject, allows teachers to offer material for remote learning as well as support or reinforcement of face-to-face classes. It includes digital objects and tools for preparing tests, calendars, blogs, forums and other teaching facilities. The subjects require an enrollment, so this is a closed platform.
- OpenCourseWare OCW-UPM (http://ocw.upm.es/) Web space that contains teaching materials created by UPM teachers for higher education. It includes complete subjects that contain different teaching materials (documents, program, calendar, etc.) used in the process of teaching-learning of those subjects held at UPM's classrooms, following a default template. It is an open platform and its content is offered freely and universally via WEB, under a Creative Commons license. This platform is part of the OpenCourseWare Consortium so it assumes the commitment to "share knowledge", promoting that teachers who wish so, "make visible" their teaching material used to teach their academic subjects. So, it offers other professors, students or professionals around the world, open and free access to knowledge.
- UPM Youtube channel (http://youtube.com/upm) UPM institutional channel on YouTube that gathers videos of events of different nature (academic, institutional and educational) that have taken place at the UPM.

E-learning, online learning accredited study programs

Do you have any accredited study program that is performed completely online? Do you have any accredited study program that is performed in the blended mode (partly online, partly face-to-face)?

Regarding official, accredited by Ministry, grade courses, there is no online or blended ones. There are some blended official master courses and some of them in transition to online. Meanwhile, there are online proper, non-accredited by Ministry, courses. The latest communication of the Association of Spanish Universities CRUE from 27th January 2021, confirms that the presentiality is the essence of Spanish university system, ant the online format should be the last resource, applied only when circumstances make it inevitable. https://www.upm.es/sfs/Rectorado/Gabinete%20del%20Rector/Notas%20de%20Prensa/2021/01/documentos/2021.01.27_Comunicado%20seguridad%20examenes%20presenciales.pdf

E-learning enhancements for the students with disabilities

Do you have prepared e-learning material or any module on your e-learning platform for blind, visually impaired, people with hearing loss, deaf or people with other disabilities? Do you have a requirement at your university that e-learning platforms need to be in accordance with the accessibility principles for all?

Regarding the proper LMS, Moodle tries to accomplish the international requirements on accessibility. It is not the highest level, but it is working objective of the highest priority. Regarding the content which is stored by professors at the LMS, there is no control how accessible they are. It is in the phase of study, the incorporation of the plugin Ally into the Moodle (https://www.blackboard.com/es-lac/teaching-learning/accessibility-universal-design/blackboard-ally-lms) which permits the accessibility analysis of the documents stored at Moodle, to make recommendations to the author to improve its accessibility and to show the information to the students in more accessible textual or audiovisual forms.

In respect with the GATE, the intention is that all supporting material produced to be accessible, but there is no proper material produced concretely. That is why there is collaboration with the Incapacity Unit of UPM to accomplish the national legislation as being the public institution, https://www.upm.es/UPM/CompromisoSocial/UnidadAtencionDiscapacidad.

University of Malta (UM)

E-learning organization in your institution

Do you have any e-learning strategy document prepared on the university level or on the faculty level; if not, is e-learning mentioned in your existing strategies;

The University of Malta (UM) has an official Distance and e-Learning policy which is available at: https://www.um.edu.mt/__data/assets/pdf_file/0011/374348/DistanceAndE-LearningPolicySenate20180614.pdf

This policy is intended to enable and guide academics with ensuring the highest quality learning in the prevalent digital era, and to secure the provision of sufficient support. All academics are therefore affected by this policy and all are encouraged to read and be familiar with this policy. The policy presents the parameters within which distance education and e-learning initiatives and programmes are to be developed and delivered by academics at the UM, and how quality standards for the delivery and assessment of distance education and e-learning are to be maintained.

It does not refer to pedagogical theories and approaches associated with distance education and e-learning. Cognisance of such are however assumed in the training/ experience expected amongst academics who adopt distance and e-learning initiatives at the UM.

This policy should be read in conjunction with other UM policies and guidelines including:

- Programme Validation and Study-Unit Approval Guidelines
- Intellectual Property (IP) Policy
- Copyright Guidelines for Staff
- OAR@UM Policies
- Plagiarism and Collusion Guidelines
- Lecture Capture Policy
- VLE Archiving Policy

This policy considers the following arrangements that fall under distance and eLearning:

- Distance learning or e-learning - A flexible form of learning where students can study at locations remote from University. Access to learning resources, other students and the instructor is generally facilitated through digital technologies.
- Face-to-Face Study-Unit - A study-unit in which teaching takes place mainly in the physical classroom during standard contact hours.
- Blended Study-Unit - A study-unit that combines physical class-based teaching and learning activities with online teaching and learning activities.
- Online Study-Unit - A study-unit in which all learning activities take place online in the virtual learning environment (VLE). An online study-unit may be delivered synchronously or asynchronously.
- Distance Learning Programme of Study - A programme which can be delivered in a blended or online modality as described below.
- Blended Programme of Study - A programme which consists of a planned mix of delivery modalities, including face-to-face, blended and/or online study-units as defined above. Any

programme in which less than 100% of the study-units are online is categorised as a blended programme.

- Online Programme of Study - A programme in which all the study-units are delivered online. An online programme may be delivered synchronously or asynchronously.
- Synchronous Online Classes – These classes require students and instructors to be online at the same time. Lectures, discussions and presentations occur at specific hours using web conferencing tools.
- Asynchronous Online Classes – These classes allow students to follow the study-unit in their own schedule. The instructors provide recorded lectures, learning resources, activities and assignments through the VLE. Students are required to access the learning resources and participate in learning activities on a regular basis.

Do you have a person responsible for e-learning, on the university level (e.g. vice-rectors) or on the faculty level (e.g. vice-deans);

UM has a Digital Education Committee coordinated by the vice-rector Professor Saviour Zammit. There is a representative for each Faculty and one from the IT Services department. I am the representative of the Faculty of Education on this committee. I am also a member of the DEC of the FoE.

DEC website: https://www.um.edu.mt/about/dec/_nocache

Do you have any department on the university level dealing with e-learning;

IT Services manages the technological infrastructure and organizes professional development courses in the use of various digital tools – VLE, Lecture capturing software, Online exam system, Zoom, other

The Digital Education Committee is responsible for the UM eLearning policies and strategies.

Do you have any guidelines, methodologies, recommendations in written form for e-learning performance?

Yes, we have a policy document available at: https://www.um.edu.mt/__data/assets/pdf_file/0011/374348/DistanceAndE-LearningPolicySenate20180614.pdf

Who is responsible for technical aspects of e-learning (setting up platforms, maintenance);

Department for IT Services; Website: https://www.um.edu.mt/itservices

Does your IT department have dedicated personnel for e-learning?

Yes, personnel provide specialized support – technical support, VLE / Moodle support, Video-Conferencing Support, WiseFlow support, Lecture capturing software / Panopto, Learning spaces support (IWB, Projection screens, Wifi, PA Systems), Google Education Suite, CMS and web hosting.

Details of roles: https://www.um.edu.mt/itservices/ourstaff

Learning Management Systems (LMS) in your institution

LMS are online platforms intended to store and deliver learning materials to students; students are grouped in LMS according to their study programs and subjects; LMS can be used to perform online learning process; Are you using LMS? Which One?

Moodle

What is the extent of use of LMS, how many subject/professors are present in your LMS (e.g. less than 10%, 10%-25%, 25%-50%, 50%-75%, 75%-90%, all subjects)?

Pre-Covid 25 – 50%; during Covid 75 – 90%

Subject/professors present in the LMS of the UM Pre-Covid 25%-50%; during Covid 75%-90%.

What is the predominant complexity of the LMS use? Basic: putting electronic learning material for the students (eg. Lesson plans, PDF or PPT materials); Intermediate: electronic learning materials + quizzes for students; Advanced: performing team work, collaborative work, seminars, regular monitoring of students' progress, etc;

Pre-Covid – Basic use

During Covid: Advanced use combining Moodle with Zoom.

Who is administering your LMS?

IT Services

Is it a manual work (managing users/students/teachers/subjects or automatic)?

Combination of a manual and automatic work.

Is your LMS integrated with any external information system?

Zoom integrated in Moodle.

Do your faculties use the same LMS or different ones, is there a systematic approach or is it left to faculties/departments/individual professors

There is a system approach where every Faculty uses the digital tools (including VLE) officially adopted by UM.

Videoconferencing (remote or online lectures, laboratory work, auditoria work) in your institution

Do you use videoconferencing software for online lectures performance?

Yes

Do you use it only because of Covid19 situation or is it part of your regular study process/will be part of your regular study process after Covid19?

Before Covid vc was mainly used to deliver simultaneous sessions for on-site courses at the main UM campus and the Gozo (sister island) Campus. A small number of academics used vc to deliver online sessions in their courses. Then Covid compelled most academics to use VC to deliver their courses.

Covid made little difference for me as video conferencing / online sessions are a central component of my courses. And this approach will be continued after Covid.

Which videoconferencing tools do you use?

IT services have 2 video conferring suites which can be booked by academic staff. These have been used to deliver courses combining main university Campus in Msida Malta and the University Campus in Gozo, the sister island.

Big Blue Button is integrated in the UM Moodle platform.

During Covid all academic staff have been using Zoom to deliver online sessions.

With regards to Faculty of Education, since state and Church schools in Malta have been using MS Teams during the Covid pandemic, we had to provide access, training and support to Faculty staff and students to carry out the online or blended 'Teaching Practice' within these schools.

Do you have licenses covered for all teachers?

Regarding Zoom IT Services invested in a package which gave access to all academic staff.

Regarding MS Teams IT Services invested in a package which gave access to students and staff of the Faculty of Education.

To what extent do you use videoconferencing for your lectures in Covid19 situation (e.g. less than 10%, 10%-25%, 25%-50%, 50%-75%, 75%-90%, all subjects)? To what extent do you use it otherwise?

All subjects

Do you use videoconferencing in the webinar mode (teachers present, students attend and participate in chat) or in the meetings mode (teachers and students present with video and audio) predominantly?

Predominantly 'Meeting Mode'.

How do you perform remote lectures? Do professors perform them from their cabinets/home or do they perform them from the classrooms with some students attending the class and other being online (hybrid lectures)?

Most academic staff deliver online sessions from home. Some do deliver from their office. For subjects demanding physical activity or use of equipment – Design and technology, Home Economics, drama, dance, music, PE, others – a hybrid approach had to be adopted. But on-site presence was very restricted and many tutors had to device technology-mediated means how to teach and have students learn subject matter.

Do you find the hybrid lectures interesting for your university?

This approach was not used at all at UM. Faculty of Education provided training to students going on teaching practice (which was delivered online or in hybrid mode) to adopt a learning activities approach to manage the hybrid situation.

Do you record your lectures often? Where do you store your recordings?

Lectures are only recorded for some courses which involve part-time students. Most online lectures are delivered live and not recorded. When recorded they are either stored in the Zoom linked cloud or if recorded using the Panapto software they are stored in the linked online depository.

Do your faculties use the same videoconferencing or different ones, is there a systematic approach or is it left to faculties/departments/individual professors.

The UM adopts a systems approach. Through the IT Services department, it provides the Zoom videoconferencing platform to all Faculties and staff (academic and administrative). Academic staff use this to deliver online course sessions, carry out meetings and events. They can also make use of the Videoconferencing suite which is satellite based. Members of the Faculty of Education are also given access to MS Teams as they have to train students in using this platform when on teaching practice and as future teacher in State or Church schools.

Collaborative platforms

Do you use any additional online platforms for online collaboration activities with students or to share some larger files…? e.g. Google drive, google other services, Dropbox…

- Through IT Services, UM provides access to Google Education suite comprising Gmail, Calendar, Drive, Chat, Meet and Keep.
- UM staff are provided with unlimited storage capacity on Google drive

Exams and Knowledge assessment platforms, proctoring systems

Do you perform oral or written exams online? How do you do it? Are you using Exam.net, or Safe Exam Browser in combination with LMS, or Exam.net/SEB in combination with LMS and videoconferencing tool for control, or just videoconferencing tools? Are you using any other proctoring system (to perform exams in the online safe environment)?

Since May 2020 the UM introduced WiseFlow as its official online examination system. The IT Services department set up the system and provided training for the academic staff from all Faculties that had to administer exams online.

Multimedia learning material storage (repository)

Where do you store the video learning material you produce or other large files used in the learning process? Is there a systematic approach, or is it left to faculties/departments/individual professors? Is there a need for such repository at your university?

In line with the principle of limiting the sharing of academic content with private commercial entities, the UM through the IT services Department provides space on its servers for repositories of Multimedia learning material that are used in the Moodle VLE or in webhosting services.

E-learning, online learning accredited study programs

Do you have any accredited study program that is performed completely online? Do you have any accredited study program that is performed in the blended mode (partly online, partly face-to-face)?

UM offers courses using any of the following four delivery modes:

- Full-time Distance Learning
- Full-time Blended
- Part-time Distance learning
- Part-time Evening Blended

Courses currently offered:

	Delivery mode	Faculty
Master in Contemporary Diplomacy	Full-time Distance Learning	Faculty of Arts
Bachelor of Science (Honours) Health Science	Part-time Distance Learning	Faculty of Health Sciences
Master in Technology-Enhanced Learning	Part-time Evening Blended	Faculty of Education
Postgraduate Certificate in Developing the Educator	Part-time Evening Blended	Faculty of Education
Bachelor of Science (Honours) in Nursing (Elderly Care)	Part-time Evening Blended	Faculty of Health Sciences
Master of Science in Diabetes Care	Part-time Evening Blended	Faculty of Health Sciences & Faculty of Medicine and Surgery

E-learning enhancements for the students with disabilities

Do you have prepared e-learning material or any module on your e-learning platform for blind, visually impaired, people with hearing loss, deaf or people with other disabilities? Do you have a requirement at your university that e-learning platforms need to be in accordance with the accessibility principles for all?

The Department of Disability Studies within the Faculty of Social Well-Being of the UM offers the following course mainly for professionals working with persons with special needs:

- Master of Arts in Disability Studies Preparatory Programme
- Master of Arts in Disability Studies
- Course in Community Access for Disabled People: Certificate, Diploma and Higher Diploma Levels
- Bachelor of Arts in Disability Studies and Psychology

None of these courses provide e-learning material on the UM Moodle/VLE people with disabilities. To date there is no requirement at UM that the Moodle / VLE need to be in accordance with the accessibility principles for all.

University of Ljubljana (UL)

Introduction

UL is a large, traditional on-campus university. It has 26 members, 23 faculties and 3 academies, covering natural, social sciences fields as well as art. There are more than 40.000 students and more than 5.000 teachers and researchers at our university.

The term "e-learning" is replaced with the term "digital education" in this document. The term describes the usage of Information and Communication Technology (ICT) in pedagogical process at the University of Ljubljana (UL). The term describes using ICT in:

- traditional pedagogical process face-to-face in classrooms or as a supplement to traditional pedagogical process
- blended pedagogical process (partly performed face to face, partly remote)
- distance or remote pedagogical process (fully remote, fully online)

E-learning organization in your institution

Strategic documents

UL does not have a special strategy document addressing digital education at our university. Instead, digital education is addressed within the general strategic document for the period 2012 - 2020. During the preparation of the **University strategy for the period 2021 – 2027**, digital education became more important, as it is one of the pillars when discussing about **internationalization, student mobility and excellence in quality of pedagogical process**. Again, it is not addressed in the special strategy, rather embedded in the main strategic document.

Concrete action plans related to digital education are being developed on the yearly basis, adjusted and confirmed by the rectorate of the University.

Digital education organization (persons, departments)

UL members are autonomous entities. This means that UL provides mainly administrative centralized services to UL members. Apart from pedagogical process quality alignment, recommendations and control, all other pedagogy related services and activities are left to the members to decide and perform themselves.

Design and performance of digital education was therefore (in the past) also dependent on the members themselves. UL members that had the need to introduce the digital education for any purpose, have implemented systems and platforms and built knowledge about digital learning on their own. Most other UL members lagged behind.

This approach was not optimal, since IT employees and administrators performed the same activities on different UL members, with similar technology (LMS) multiplied on the premises of the individual UL members. Due to lack of funds and resources these services were delivered with best-effort principle, usually not being able to guarantee professional 24/7 operation.

In recent years, advanced academic environments in EU member states invested heavily into digital education. It became evident that systematization and further development of digital education at UL was necessary, with the aim to overcome following challenges:

- increasing the awareness and raising digital competencies of UL teachers
- decreasing the gap between advanced and deprived UL members
- optimizing resources
- considering UL specifics (e.g. maintaining the sentiment of UL members autonomy)

In order to perform that, the UL started a project, called "Digital University" in 2017 with the following activities in mind:

- analyses of needs and requirements
- proposing pedagogical models and innovative pedagogical approaches
- engaging teachers from all UL members, performing trainings
- performing pilot ICT supported pilot deliveries of courses on all UL members
- providing pilot digital learning environment for under capacitated UL members
- creating an organizational structure on UL level

The project had very good results. It onboarded the UL rectorate as well as the managements of all UL members. It raised awareness across the UL and enabled the establishment of the organizational entity on the UL level, called the UL "Center for ICT supported pedagogical process" or "Digital University Center".

Digital University Center (CDiUL) is located at the UL rectorate. This enables close cooperation with the UL level services (UL department for quality, analysis and reporting; UL IT department; Rectors office and others). CDiUL is directly responsible to **UL secretary general**.

CDiUL cooperates with all UL members on the following levels:

- with representative of the **UL members leadership/management** (usually dean or one of the vice deans)
- with IT departments at **UL members**
- with selected teachers, called **multiplicators**
- with other UL members teachers through support provisioning, consultations, pilot deliveries and trainings performance

Pedagogy/didactical aspects

Pedagogy aspects represented the main challenge in the systematic introduction since the teachers at the UL in many cases lack competencies about innovative pedagogical approaches. Following the DigCompEdu framework, CDiUL provides:

- regular webinars and workshops for all UL members teachers with selected content about didactical use of ICT available to teachers, as well as about innovative pedagogical approaches and methods, ranging from collaborative, project, experimental work to game-based learning and mobile learning.
- Specific workshops targeted to specific UL members only
- Experiences and knowledge exchange events for UL teachers, where teachers present and share their experiences

- CDiUL also provides consulting to individual teachers about their specific challenges and questions. Consulting is performed online or in live sessions (meetings).

Due to lack of human resources available in the CDiUL, strategically, especially in the larger UL members (with more students, studying programs and teachers), pedagogical support is being decentralized. This process is ongoing, with selected UL teachers, called multiplicators (with pedagogical expertise and background) from larger UL members being first trained and subsequently taking over consultation and training for teachers from their UL member.

Technical aspects

CDiUL also plans and gradually implements common UL online learning environment that currently supports LMS, integrated with videoconferencing systems and backend student information systems. In the forthcoming future, the environment will be upgraded with multimedia learning repository, lecture capture, online content development tools and other applications. Currently, five of 26 UL members are using this environment with the next set of UL members starting to use it in the school year 2021/22.

CDiUL provides technical consultation to UL teachers individually. Consulting is performed online or in live sessions.

CDiUL has established a working group of IT specialists from IT departments, some teachers as well in all UL members. The aim is to plan future technical development and engage IT experts from entire UL to assure that the future common learning environment will answer the needs of teachers at all UL members.

Guidelines, methodologies, recommendations

UL has developed set of guidelines and recommendations for teachers, as well as for UL members management bodies. Different aspects are encompassed, from performance of the remote lectures or laboratory work, to knowledge assessment, using different technologies, etc. All recommendations are available on the CDiUL web site (https://digitalna.uni-lj.si/) in PDF format, as video tutorial guides or as recorded webinars.

Short answers to questions

1. *do you have any e-learning strategy document prepared on the university level or on the faculty level; if not, is e-learning mentioned in your existing strategies;*

Specific strategy no, digital learning is embedded in UL strategic documents

2. *do you have a person responsible for e-learning, on the university level (e.g. vice-rectors) or on the faculty level (e.g. vice-deans);*

On the university level, UL general secretary is responsible; on the UL members level, usually, dean or one of the vice-deans is responsible

3. *do you have any department on the university level dealing with e-learning;*

Yes, there is an entity on the rectorate level, called the UL “Center for ICT supported pedagogical process” or “Digital University Center” (CDiUL).

4. *do you have any guidelines, methodologies, recommendations in written form for e-learning performance?*

Yes, available to UL teachers on the CDiUL website, comprehensive.

5. *who is responsible for technical aspects of e-learning (setting up platforms, maintenance); does your IT department have dedicated personnel for e-learning?*

On the UL level, UL IT department takes care of IT infrastructure, but not of the applicative layer. The responsible body for the applicative layer is CDiUL. Each UL member has its own IT department. In 21 UL members, IT departments still take care of the most of applications used in e-learning and technical support. In 5 UL members, this has been transferred to CDiUL. In the forthcoming future, the number of UL members using common technologies will rise with the start of each student year.

Learning Management Systems (LMS) in your institution

LMS are online platforms intended to store and deliver learning materials to students; students are grouped in LMS according to their study programs and subjects; LMS can be used to perform online learning process;
Are you using LMS? Which One?
What is the extent of use of LMS, how many subject/professors are present in your LMS (e.g. less than 10%, 10%-25%, 25%-50%, 50%-75%, 75%-90%, all subjects)?
What is the predominant complexity of the LMS use? Basic: putting electronic learning material for the students (eg. Lesson plans, PDF or PPT materials); Intermediate: electronic learning materials + quizzes for students; Advanced: performing team work, collaborative work, seminars, regular monitoring of students' progress, etc;
Who is administering your LMS? Is it a manual work (managing users/students/teachers/subjects or automatic)? Is your LMS integrated with any external information system?
Do your faculties use the same LMS or different ones, is there a systematic approach or is it left to faculties/departments/individual professors

Currently 25 out of 26 UL members are using Moodle. One UL member is using Canvas.

5 out of 25 UL members are using common, UL based Moodle maintained by CDiUL. 20 members are maintaining their own Moodle systems with the aim to migrate to UL Moodle in maximum two years.

5 Moodle systems, maintained by CDiUL are connected to back-end student information systems, another two are also connected, whereas the rest are maintained manually without any integration so far.

The extent of use of LMS differs. Generally, across the entire UL, we can estimate that more than 50% of all teachers (50%-75%) are using LMS. There are at least 10 UL members that are using LMS 100% and there are only two UL members that are using LMS less then 25% (Academy of fine arts and Academy of Theatre, Radio, Film and Television).

The complexity of use can be generally defined as somewhere between basic and intermediate. The UL members that are performing pedagogical studying programs generally use more advanced LMS features.

Administering is performed manually in 18 cases. In 8 cases (1 canvas, 7 Moodle) the LMS is integrated to student information system.

Videoconferencing (remote or online lectures, laboratory work, auditoria work) in your institution

Do you use videoconferencing software for online lectures performance? Do you use it only because of Covid19 situation or is it part of your regular study process/will be part of your regular study process after Covid19?
Which videoconferencing tools do you use? Do you have licenses covered for all teachers?

To what extent do you use videoconferencing for your lectures in Covid19 situation (e.g. less than 10%, 10%-25%, 25%-50%, 50%-75%, 75%-90%, all subjects)? To what extent do you use it otherwise?
Do you use videoconferencing in the webinar mode (teachers present, students attend and participate in chat) or in the meetings mode (teachers and students present with video and audio) predominantly?
How do you perform remote lectures? Do professors perform them from their cabinets/home or do they perform them from the classrooms with some students attending the class and other being online (hybrid lectures)? Do you find the hybrid lectures interesting for your university?
Do you record your lectures often? Where do you store your recordings?
Do your faculties use the same videoconferencing or different ones, is there a systematic approach or is it left to faculties/departments/individual professors

Videoconferencing tools are widely used across all UL members. There are two systems licensed and available to all teachers, Microsoft Teams and Zoom. Usage of videoconferencing systems grew rapidly due to Covid19 crisis, in fact, almost all teachers use it in the pedagogical process (>90%). Apart from the systems mentioned above, some teachers/UL members use Cisco Webex or BigBlueButton, but the later ones are not supported on the university level.

It is estimated that after the Covid19 crisis, the usage of videoconferencing systems will remain present. Not to the same extent, since the lectures at our University are predominantly performed face-to-face, but anyway, it is evident that the teachers accepted videoconferencing tools as one of the ordinary means of communication with students. Additionally, some teachers told us that they will partly perform their lectures in the hybrid form: lecturing from distance, some students in the classroom, other access remotely.

Videoconferencing tools are used predominantly in the meetings mode, since the licenses enable active participation of up to 300 users. However, in remote lectures, students usually have their cameras and microphones switched of, which is not the case in smaller groups of students or in laboratory work.

Due to Covid19 measures there was no possibility of being present in the UL members' classrooms, for teachers as well as for students. Additionally, teachers were encouraged to work from home, not from their offices or cabinets. Therefore, most of the lectures were performed from teachers' homes. As soon as the Covid19 measures become less rigid, the university will return to hybrid mode, meaning that teachers will lecture from classrooms, some students will attend from classrooms, other from their homes. This is planned accordingly, so that every student attends the lecture from the classroom at least ones or twice per month.

Recording of lectures is currently still limited due to technical obstacles. There is no common multimedia repository at the UL as we speak, it is still being introduced. However, on the UL members that are already piloting multimedia repository, number of recorded lectures increased rapidly in this semester. Average number of recorded lectures is less then 10% per entire university. There are two UL members, where the number of recorded lectures is between 25% and 50%. When the multimedia repository will be introduced, it is estimated that the number of recorded lectures will grow rapidly, according to the UL teachers' statements.

Collaborative platforms

Do you use any additional online platforms for online collaboration activities with students or to share some larger files…? e.g. Google drive, google other services, Dropbox…

UL members currently use different platforms for collaborative activities. Predominantly, LMS systems are used, although there are some challenges and limitations. Additionally, all UL teachers have

licensed access to Office365, MS Teams, One Drive and other Microsoft online applications, that are used for collaborative work.

There are teachers that use Google, DropBox and other solutions available freely.

The online collaboration work is present at the UL, however, technological optimization is required.

Exams and Knowledge assessment platforms, proctoring systems

Do you perform oral or written exams online? How do you do it? Are you using Exam.net, or Safe Exam Browser in combination with LMS, or Exam.net/SEB in combination with LMS and videoconferencing tool for control, or just videoconferencing tools? Are you using any other proctoring system (to perform exams in the online safe environment)?

Examination is performed online at the UL. Set of recommendations for oral and written exams was prepared for teachers and management. The platform Exam.net is available to all teachers. Examination is therefore performed in the following ways:

1. Videoconferencing (one or two cameras) for oral exams
2. LMS quiz + Safe Exam Browser for written exams
3. LMS quiz + SEB + Videoconferencing for written exams
4. Exam.net for written exams
5. Exam.net + SEB + Videoconferencing for written exams

No other proctoring systems are used or supported at the UL. After Covid19 crisis, majority of exams will return to normal, face-to-face mode. Many teachers have said that partial exams (during the semester) will still be performed online. The study winter semester 2020/21 examination period showed that performance of online examination can be performed without major obstacles, as long as the number of students examined is smaller (lower than 100, e.g.).

Multimedia learning material storage (repository)

Where do you store the video learning material you produce or other large files used in the learning process? Is there a systematic approach, or is it left to faculties/departments/individual professors? Is there a need for such repository at your university?

The UL is currently piloting multimedia repository system at the selected UL members. It is a complex project, comprising big files storage, meta data, transcoding and streaming capabilities, asset as well as content access management and integration with the back-end systems. Repositories that are piloted are:

- Micrsooft Stream + One Drive + Sharepoint + Teams;
- Mediasite
- Avideo
- Panopto
- MiTeam

Until the best multimedia repository will be selected and implemented, teachers use Microsoft One Drive, since the product is licensed for all teachers. Some also use freely available repositories with many limitations and obstacles. It is estimated that until the beginning of the next student year, multimedia repository will be the part of the common online learning environment at the UL.

E-learning, online learning accredited study programs

Do you have any accredited study program that is performed completely online? Do you have any accredited study program that is performed in the blended mode (partly online, partly face-to-face)?

The UL as the traditional on campus university doesn't have fully online accredited study program. However, we do have accredited blended study programs at the Faculty of Public Administration which consist of online study (>50%) and face-to-face meetings and lectures.

E-learning enhancements for the students with disabilities

The UL rectorate has formed a working group for students with special needs, that addresses digital learning enhancements for students with disabilities. The UL cooperates closely with Slovenian Association of Disabled Students. They are focused on preparing recommendations for digital enhancements as well specifics in digital learning methods for students with disabilities. Additionally, set of recommendations for web sites, online applications and digital studying content was prepared.

Each of the UL members has specific funds (annually) for students with disabilities. Complex mentoring and supportive systems for such students were established as well. Currently, UL is in the process of developing digital support for activities mentioned above.

Recommendations, trainings and experience exchange among teachers from this field is provided to all UL members via CDiUL.

GLOSSARY

Accessibility: refers to a characteristic of technology that enables people with varying impairments or disabilities to use it. Accessible design also benefits people with older or slower software and hardware. eLearning content developers and instructional designers should aim to make courses clear, easy to understand, and simple to complete. Learners who suffer from sensory, intellectual or technological difficulties will need assistive technology to successfully access and complete their training courses.

Assessment: Assessments often take the form of a test included at the end of a course to evaluate learner performance. They should be aligned with the learning objectives of a course to accurately measure learner progress.

Asynchronous learning: allows learners to access to training material that they can complete at their own convenience. It doesn't require real-time interaction, enabling learners to complete courses at a time, place and pace that suits them. It includes use of online materials that can be obtained or submitted by the internet via classroom portals, messages, emails, etc. Does not require a continuous connection.

Augmented reality (AR): an interactive and enhanced version of the real-world physical environment. Whereas virtual reality (VR) creates its own cyber environment, AR adds to the existing world as it is. It does it by using computer-generated visual elements, sound and other sensory stimuli.

Blended or Hybrid Learning: combination of traditional, face-to-face learning methods with technology-based online learning methods. It's also be described as a blending of live training and self-

paced training. It offers a great way to augment the learner's experience. Between 25-50% of instructions, assignments, and discussion takes place online.

Classroom-Based Training: also known as face-to-face or live training, classroom-based training is a more traditional training method. An instructor guides learner through a course in a real-world environment such as a classroom or meeting room.

Cloud LMS: a web-based platform that helps organisations and institutions to deliver, track, and report on eLearning. The main difference between a cloud LMS and other solutions is that learning content, tracking and reporting data is stored in the cloud. One benefit of a cloud LMS is that it's quicker and more cost-effective to install than self-hosted learning solutions. Cloud learning management systems also tend to require less in-house technical expertise to maintain and run.

Collaborative platform: a virtual workspace where resources (information, files, data) and tools are centralized with the aim of facilitating communication and interaction. Some example of services are shared calendars, collaborative documents and message notes.

CBT (Computer-Based Training): traditional name for what is now known as eLearning Computer-Based Training specifically describes the on-demand elements of eLearning, excluding instructor-led training.

Cloud computing: 'software as a service'; the cloud provides the infrastructure and platforms on which the applications run and end-users access cloud-based applications through a web browser or a light-weight desktop or mobile app.

CMS (Content Management System): a system that supports the creation, management, organization and consumption of digital content. An LMS is likely to contain a CMS function, to allow the internal curation of educational content.

Collaborative platform: a virtual workspace where resources (information, files, data) and tools are centralized with the aim of facilitating communication and interaction. Some example of services are shared calendars, collaborative documents and message notes.

Course Builder: Functionality in a learning management system that is used to upload and create courses. Course builders allow you to combine elements such as text, image, video etc., to make your courses more engaging.

Distance Learning: also known as Distance Education. Distance learning occurs when student and teacher / instructor are in different locations. Distance learning has been around since long before the Internet and the presence of a computer in nearly every home and office. Distance learning was a form of asynchronous learning, long before the internet. With the Internet and mobile telephony, distance learning can now be both synchronous and asynchronous – or a combination of both.

eLearning / e-learning / eLearning (Electronic Learning): the delivery of learning and training through digital resources and devices. Although eLearning is based on formalized learning, it's provided through electronic devices such as computers, tablets and even cellular phones that are connected to the internet. This makes it easy for users to learn anytime, anywhere, with few, if any, restrictions.

F2F (Face to Face Training): refers to the in-person elements of instructor-led training. Both teacher and learner are physically present in the same environment and able to converse naturally with no need for digital intervention.

Face-to-Face Web Enabled: Students "meet" virtually with their instructors (and other class members) via video chat or teleconferencing

Feedback: Feedback can be provided while a learner completes a course, an exam, or assignment in an LMS. Types of feedback include showing the learner if the answer they submitted is correct or incorrect or displaying correct answers after submission.

Fully online: Active instruction, testing, assignments, and discussion takes place online.

Hybrid or Blended Learning: combination of traditional, face-to-face learning methods with technology-based online learning methods. It's also be described as a blending of live training and self-paced training. It offers a great way to augment the learner's experience. Between 25-50% of instructions, assignments, and discussion takes place online.

ILT (Instructor-Led Training): training delivered by an instructor either in an in-person or webinar conference setting.

Immersive Learning: it leverages technologies like VR and AR to create stimulated or artificial learning environments. The interactive environments help in replicating possible scenarios and in teaching specific skills and techniques.

Learning Analytics: the measurement, collection, analysis and reporting of data accumulated during an online learning activity. Learning analytics allow for deep insight into the behaviours, competencies and experiences of learners in addition to accurately identifying areas for improvement in both the learner and the learning environment.

LMS (Learning Management System): a software application that is used to manage the administration of training (creation, management, delivering and tracking). Typically includes functionality for course catalogues, launching courses, registering students, tracking student progress and assessments. A good LMS will allow you to deliver course content in a range of eLearning standards, sell online courses, assess and evaluate learner performance, deliver blended learning, brand or white label the LMS, integrate with third-party systems, and much more.

Learning Platform: a rather general term that refers to the underlying technologies people use to build and deploy eLearning. It usually refers the authoring software, the Learning Management System (LMS) or both.

mLearning (Mobile Learning): learning that's conducted on a mobile handheld device, like a smartphone or tablet. mLearning can occur anywhere at any time. The movement from desktop to portable devices has had a big impact on the development of online learning content. Instructional designers increasingly need to develop responsive mobile learning content that can adapt to the many devices learners now use.

MOOC (Massive Open Online Courses): a pre-recorded online course aimed at unlimited participation and open access via the web with open-ended, self-paced learning, available 24/7.

Online Learning: Often used interchangeably with eLearning and web-based training. Any form of education and training where materials are distributed, and communication takes place on a computer and usually over the internet.

Simultaneous Teaching: Faculty will teach online and in-person at the same time, i.e. a live stream of a lecture that students can attend in person or virtually. Students study course material outside class and utilize classroom time to reinforce learning, ask questions, and interact with their instructor

Synchronous learning: instructor-led learning in a (virtual) classroom setting. During this kind of event, learners attend on at the same time and an instructor guides the class. It includes real time teaching, feedback and contact with instructor and other students, requiring a live (and fast) internet connection.

Virtual Classroom: where a live education or training environment is created online and accessed via digital devices, this is known as a virtual classroom. Learners and instructors need to use the same virtual classroom software to communicate, and this might be downloaded as a desktop application or mobile app, or accessed online with cloud-based software.

Virtual Learning Environment (VLE): a web-based platform to organize resources, courses and users, often within an educational institution.

Virtual Reality (VR): the computer-generated construction of a 3D environment that can be interacted with by a user, often with a headset and/or gloves fitted with sensors to allow for the realistic interaction and manipulation of objects. Virtual reality has application in online compliance training as it can safely simulate dangerous scenarios.

Web Based Training (WBT): delivery of learning content via a web-based application or internalized intranet. Content may be hosted within a web-based application (such as an LMS), or retrieved from external sources to allow a diverse and up-to-the-minute consumption of learning content.