



UMS
UNIVERSITI MALAYSIA SABAH

LEARNING WITH TECHNOLOGY A STUDENT GUIDE

**KENNETH FRANCIS RODRIGUES
FONG SOON FOOK**



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PREFACE

The rapid evolution of technology has presented both teachers and students with a unique set of advantages as well as challenges. The inability of individuals to adapt to technological developments when confronted with a bewildering array of terminology and platforms can have serious legal and social implications.

The student learning guide has been developed with the aim of addressing technological developments in an area of learning which has now been designated as Technology Enabled Learning (TEL). The objective of this guide is to enable the usage of technology in order to enhance the teaching and learning process within the context of the current laws and guidelines pertaining to the usage of multi-media in Malaysia.

The guide commences with an introduction to the Universiti Malaysia Sabah Learning Management System (UMS LMS), which is based on the Moodle Open source platform. The UMS LMS has been designated as SMART2UMS. Students have been provided with the basic instructions, such as registration at the site, as well as more advanced instructions pertaining to the assessment tools such as quiz and assignment.

The Department of Information Technology and Communication (JTMK) is responsible for the management of Internet resources at UMS. They offer a range of services for both staff and students registered at UMS, which include the Google Suite, Microsoft Office 365, statistical software package SPSS and the inter-university Wi-Fi service Eduroam. The procedures for the usage of these and other services are covered in this guide.

The UMS Library offers multiple services which can be accessed by staff, students and registered UMS users. These include online databases which provide access to international, peer reviewed journals, UMS theses, and software for checking plagiarism in user-generated content.

Inappropriate etiquette when using social media platforms and multimedia can have serious legal implications as well as social repercussions. UMS complies with the provisions of the COMMUNICATIONS AND MULTIMEDIA ACT 1998 (Act 588), and both staff and students are obliged to comply with the technical and legal requirements when utilising communication platforms at UMS. The fundamental guidelines are outlined in the section on Social Media.

The Centre for E-learning (PEP) is responsible for the management of the pedagogical aspects of Technology Enabled Learning as well as the development of Multi-media and Open License Content under the UMS Open Educational Resources (OER) repository. PEP is also actively engaged with both lecturers and students as part of its initiative to foster TEL among the UMS community and bring them up to par with their global peers.

We sincerely hope that this student learning guide will be of service to you in your learning journey at UMS.

Kenneth Francis Rodrigues
Fong Soon Fook
Editors

FOREWORD

Message from the Vice Chancellor



Universiti Malaysia Sabah strives to be an innovative university of global standing and this student learning guide supports the long-term vision and mission of UMS. This is in keeping with the Ministry of Education's Higher Education Blueprint which translates into the UMS Key Result Areas as delineated in the Strategic Plan.

I congratulate the collaborative effort made by the Centre for E-learning, the UMS Library, the Department of Information Technology and Communication, and the authors from diverse faculties and institutes who have contributed to the development of this important resource for our students. UMS is grateful to the Commonwealth of Learning, which has been instrumental in the development of this guide by providing generous technical, as well as financial support as part of its initiative to promote Technology Enabled Learning at UMS.

The contemporary world is driven by technology which has pervaded all aspects of our daily lives and teaching and learning are no exceptions. Lecturers and students are expected to be cognisant of the recent advances in technology in teaching and learning and the manner in which these advancements can be leveraged in both social and economic settings. The majority of our students are digital natives who were born into a technology-driven environment. However, technology presents the user with a bewildering array of terminologies and platforms which can be misleading if not interpreted within the right context. This guide will serve as a means to inform students of the technical aspects of learning.

Technology comes with its own social and ethical challenges, and non-compliance with national and international laws pertaining to copyrights can have serious consequences for individuals and institutions. This guide highlights the precautions which users need to be aware of in order to protect themselves - as well as UMS - from legal challenges which can come in many forms, such as copyright violations, moral, ethical and cultural contraventions, as well as the usage of illegal commercial platforms, such as those linked to online gambling and other detrimental commercial activities.

It is my sincere wish our students reference this guide during the period of their association with UMS, in the quest to advance themselves as future representatives of an elite, technologically enabled workforce.

A handwritten signature in black ink, consisting of several fluid, overlapping strokes that form a stylized, abstract shape.

Professor Datuk Dr. D Kamarudin D Mudin
Vice-Chancellor
Universiti Malaysia Sabah

CHAPTER 1: The University

1.1 Brief introduction to UMS

Universiti Malaysia Sabah (UMS) is a public higher learning institution in Malaysia which produces human resources, experts and professionals in a variety of fields with the focus on quality: of the graduates, the teaching and learning process, and the administrative system. Inspired by its vision to be an innovative university of global standing, UMS strives to achieve academic excellence and international recognition through its concentration on learning and teaching, research and publications, social services and balance in knowledge specialisation. The University also prioritises the personal growth of its students, and places great emphasis on innovation and productivity for the benefit of society and the nation as a whole. UMS is committed to educational transformation to fulfil the core aspirations outlined in the Malaysia Education Blueprint 2015–2025 (Higher Education) in preparing the nation's youth to thrive in an uncertain future.

As of 31 March 2019, UMS serves over 17,000 undergraduates, postgraduates and research students through its three campuses located in Kota Kinabalu, Labuan, and Sandakan. The majority of the students are enrolled in one of the 67 active undergraduate programmes offered by the University. These programmes are facilitated by nearly 900 active staff across ten faculties, and four centres of excellence, which offer comprehensive coverage of all the principle academic disciplines. There are eight academic centres and institutes, each of them centres of excellence in their respective domains.

1.2 Vision

The University strives to be an innovative University of global standing.

1.3 Mission

The University strives to achieve academic excellence and international recognition through its attention towards learning, teaching, research, publications, social services, as well as a balance in knowledge specialisation. The personal growth of students is also prioritised, thus resulting in greater innovation and productivity for the benefit of the society and the nation as a whole.

1.4 Objectives

The University's objectives are as follows:

1. To set standards of academic excellence in various chosen disciplines and to receive international recognition for these achievements.
2. To explore and apply the said chosen disciplines effectively in order to enhance social and national development.
3. To uphold academic autonomy and to maintain intellectual excellence in the University community.
4. To produce specialised yet balanced, assertive, open-minded, God-fearing and patriotic graduates.

5. To organise teaching and research programmes of the highest quality and relevance for the benefit of the society and the nation.
6. To enhance ties between universities, industries, professional bodies, social organisations and the government.
7. To nurture universal humanistic values and open-mindedness, coupled with a sense of service and dedication among academicians, scholars, officials, and auxiliary staff in the University to ensure optimum productivity.
8. To contribute towards the dynamic socio-economic development of the nation.
9. To foster pride and prestige in the University as a progressive premier educational institution.

1.5 Logo

Figure 1 shows both a labelled and an unlabelled version of the University logo:

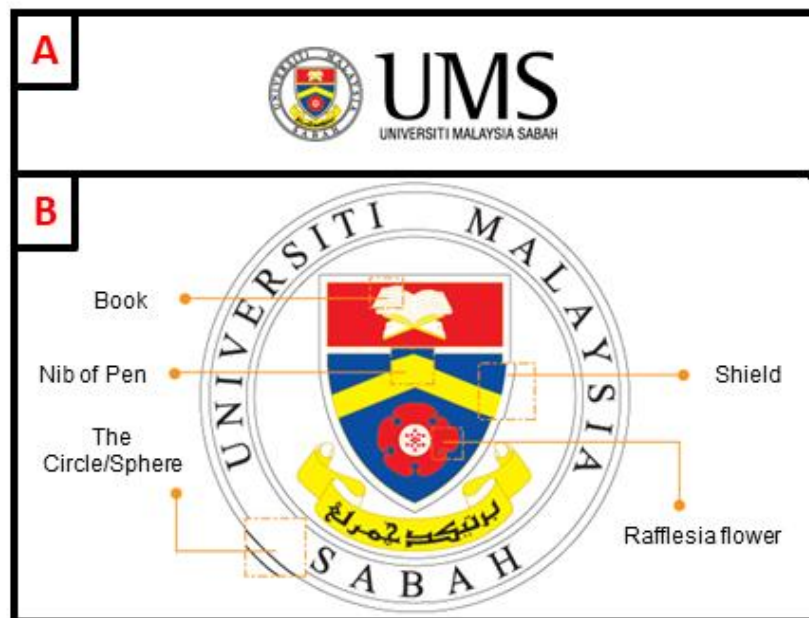


Figure 1: University logo. A: Unlabelled version B: Labelled version

The elements found in the University's logo are explained in Table 1:

Table 1: Explanation of elements found in the University's logo.

Element	Explanation
Shield	Symbolises the University as one entity, deriving strength from unity of effort and togetherness in supporting its vision.
Book	Represents knowledge revealed to man by God as a source of intellect and belief. It also represents an insatiable spirit of inquiry and an inquisitive, analytical mind.
Nib of pen	Implies accuracy and the importance of knowledge appreciation as well as symbolising the process by which ideas born in the mind are transformed into words on paper.
Rafflesia flower	Signifies the unique attributes of Sabah, "The Land Below the Wind".
The circle/sphere	Describes the universe which gave birth to the world. It also indicates that what is to be imparted is the sum of all worldly knowledge.
Yellow (colour)	Symbolises the campus members, who are always cheerful, positive and dynamic, just like the natural world, ever radiant under the sun.
Red (colour)	Symbolises the integrity, patience and resolve required of each member of the University in the face of obstacles to success and the achievement of excellence.
Blue (colour)	Symbolises a harmonious living and working environment, which reflects the bond of brother and sisterhood between members of the campus community.

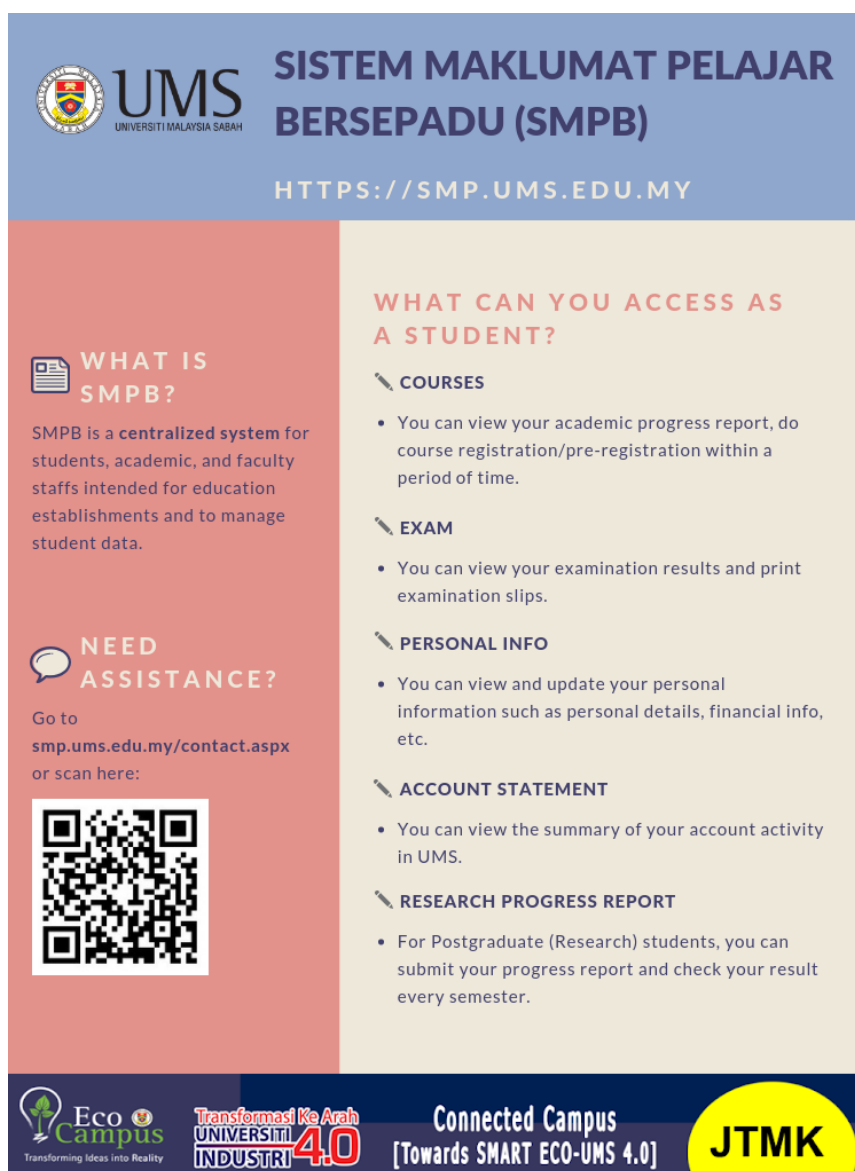
CHAPTER 2: The University's IT Infrastructure

2.1 Brief overview of the IT infrastructure

The University's IT infrastructure is handled by the University's Department of Information Technology and Communication (JTMK). Among the many services and facilities provided are licensed (online and offline) software installation, SMART UMS (learning management system (LMS)), Integrated Student Information System (SMPB), Virtual Desktop Infrastructure (VDI), Wi-Fi Internet access, as well as staff and student e-mail accounts via Google Suite. A copy of the University's Communication and Information Technology (IT) policy is available at <http://www.ums.edu.my/jtmk/DICT>.

2.2 Introduction to SMPB

Figure 2 shows a pictographic introducing students to the SMPB system.



The poster for the Integrated Student Information System (SMPB) at UMS features the university's logo and name at the top left. The main title is 'SISTEM MAKLUMAT PELAJAR BERSEPADU (SMPB)' with the URL 'HTTPS://SMP.UMS.EDU.MY' below it. The content is divided into two columns. The left column, on a red background, explains 'WHAT IS SMPB?' as a centralized system for students, academics, and faculty, and provides 'NEED ASSISTANCE?' information, including the URL 'smp.ums.edu.my/contact.aspx' and a QR code. The right column, on a light beige background, lists 'WHAT CAN YOU ACCESS AS A STUDENT?' with categories: COURSES (viewing progress and registration), EXAM (viewing results), PERSONAL INFO (updating details), ACCOUNT STATEMENT (viewing activity), and RESEARCH PROGRESS REPORT (submitting reports). The footer contains logos for 'Eco Campus', 'Transformasi Ke Arah UNIVERSITI INDUSTRI 4.0', 'Connected Campus [Towards SMART ECO-UMS 4.0]', and 'JTMK'.

UMS
UNIVERSITI MALAYSIA SABAH

SISTEM MAKLUMAT PELAJAR BERSEPADU (SMPB)


[HTTPS://SMP.UMS.EDU.MY](https://smp.ums.edu.my)

WHAT IS SMPB?

SMPB is a **centralized system** for students, academic, and faculty staffs intended for education establishments and to manage student data.

NEED ASSISTANCE?

Go to smp.ums.edu.my/contact.aspx or scan here:



WHAT CAN YOU ACCESS AS A STUDENT?

- COURSES**
 - You can view your academic progress report, do course registration/pre-registration within a period of time.
- EXAM**
 - You can view your examination results and print examination slips.
- PERSONAL INFO**
 - You can view and update your personal information such as personal details, financial info, etc.
- ACCOUNT STATEMENT**
 - You can view the summary of your account activity in UMS.
- RESEARCH PROGRESS REPORT**
 - For Postgraduate (Research) students, you can submit your progress report and check your result every semester.

Eco Campus
Transforming Ideas into Reality

Transformasi Ke Arah
UNIVERSITI
INDUSTRI 4.0

Connected Campus
[Towards SMART ECO-UMS 4.0]

JTMK

Figure 2: Introduction to SMPB

2.3 Introduction to VDI

Figure 3 shows a pictograph introducing the VDI facility available at UMS.

UMS
VIRTUAL DESKTOP INFRASTRUCTURE

LIST OF EXISTING SOFTWARE
Office 365, Adobe Creative Cloud, IBM SPSS AMOS, MATLAB, sanako, AUTODESK

WHAT IS VDI ?
Users can use apps and software without installation.
Users only need to login to use all available application and software facilities

WHY USE VDI ?
Save time, Cost savings, Easy to use, Available, Worked Any Device, Access by network campus

HOW TO ACCESS
<https://smartdesk.ums.edu.my>
01 GO TO
02 DOWNLOAD CITRIX RECEIVER
03 LOGIN
04 WELCOME PAGE

REMINDER
* User's Session will end automatically after 15 minutes of inactivity.
* Data must be saved outside of the virtual environment or direct to external hardisk.

For any inquiry, please contact JTMK
Email : helpdesk@ums.edu.my
whatsapp : 01093202234 or;
<http://www.ums.edu.my/jtmk/support>



Eco Campus
Transformasi Ke Arah UNIVERSITI INDUSTRI 4.0
Connected Campus [Towards Smart Eco-Campus UMS 4.0]
JTMK

Figure 3: Introduction to VDI

2.4 Introduction to UMS Webmail

Figure 4 shows a pictograph introducing the UMS Webmail.


WEBMAIL UMS
webmail.ums.edu.my


Gmail UMS  

is the NEW staff and student email powered by Google Suite for Education.

The use of services and apps provided by Google: subject to the terms and conditions between you and Google Suite for Education.

LOGIN

 **STAFF** with email address (xxxxx@ums.edu.my) and password (WiFi password)

 **STUDENT** with student email address (matric number@student.ums.edu.my) and password (noic or passport or wifi password).







DO NOT

- NEVER let others use UMS email address.
- NEVER use weak password.
- DON'T create spamming mail, mail-bombing, phishing, distributes emails that contain unethical information to individuals, mailing lists or group discussions.





DO

- USE your own UMS email address.
- USE the password according to the password policy.


Google Suite for Education

-  a free Web-based e-mail service
-  time-management and scheduling calendar service
-  a versatile tool that makes creating a website easy
-  a file storage and synchronization service
-  word processor, a spreadsheet and a presentation program respectively, all part of a free, web-based software
-  an online form developed by Google

For any enquiries or technical support, please contact

-  613100 / 3888
-  helpdesk@ums.edu.my
-  010 9329234(WhatsApp only)
-  088 320000 sambungan 613100

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 **Eco Campus**
Transforming Ideas into Reality

Transformasi Ke Arah UNIVERSITI INDUSTRI 4.0

JTMK

Figure 4: Introduction to UMS Webmail

2.5 Introduction to password policy

Figure 5 shows a pictograph on the password policy and recommendations by JTMK.

UMS
UNIVERSITI MALAYSIA SABAH

PASSWORDS : do's and don'ts

D O

- ✓ **Do** use at least 8 characters and a mixture of character types (letters, numbers, symbols) - This makes it harder for an automated password-cracking program to try all of the possible combination.
- ✓ **Do** set a password that is not the same as the user identification
- ✓ **Do** remember to sign out once you have finished, or the next user won't need a password because you're still logged in.

D O N ' T

- ✗ **Don't** give your password to someone else - Your password is meant to be a secret. If someone else knows it then they can pretend to be you.
- ✗ **Don't** use a word that you would find in the dictionary or any personal details about yourself - Because this can be more easily guessed by cracking programs or people that know you.
- ✗ **Don't** write your password down somewhere that it could be found - Because someone could find it!
- ✗ **Don't** allow the computer to remember your password - An impostor could only need to know your username in order to get access, as the system would automatically provide the password for them.

T I P S ♥ Use something that is meaningless, but still pronounceable (e.g. n@w3nt3r)

♥ Don't worry about remembering password for sites that you won't use very often (you could just use the 'forgotten password' link when you want to log in)

ISMS SIRIM CERTIFIED TO : ISO/IEC 27001:2013
CERT. NO : MY-AR 6181

FROM : JTMK, UMS

Figure 5: Password policy and recommendations

2.6 Introduction to the Wi-Fi Internet service

Figure 6 shows a pictograph introducing users to the Wi-Fi Internet service provided by UMS.

KEMUDAHAN WIFI PELAJAR



BAGAIMANA UNTUK LOGIN ?

Username dan Kata Laluan :
Login adalah sama seperti email rasmi pelajar.



WIFI PELAJAR

Wifi Pelajar meliputi lokasi:

1. Fakulti-fakulti.
2. Kolej-kolej Kediaman:
 - i. Tun Mustapha.
 - ii. Tun Fuad.
 - iii. Kolej Excellent.
 - iv. Kolej Kediaman Kingfisher.
 - v. Kolej Kediaman USIA.
 - ** Kolej Kediaman Sri Angkasa.

EDUROAM boleh digunakan oleh pelajar, kakitangan dan para penyelidik di mana-mana Universiti di dalam dan luar negara.



LIPUTAN WIFI UMS



3 PERANTI UNTUK SEORANG PELAJAR

Pelajar boleh menggunakan tiga (3) peranti dalam satu masa bagi perkhidmatan wifi Universiti



Sila hubungi 088-320000 sambungan 613100/3888 atau melalui aplikasi WhatsApp 010-9320234 untuk pertanyaan.

Emel : helpdesk@ums.edu.my



Connected Campus Towards Smart ECO-UMS 4.0

JTMK

Figure 6: Introduction to the Wi-Fi Internet service provided by UMS

2.7 Introduction to SMART UMS

SMART UMS is a learning management system (LMS). Figure 7 shows a pictograph introducing users to the LMS at UMS.

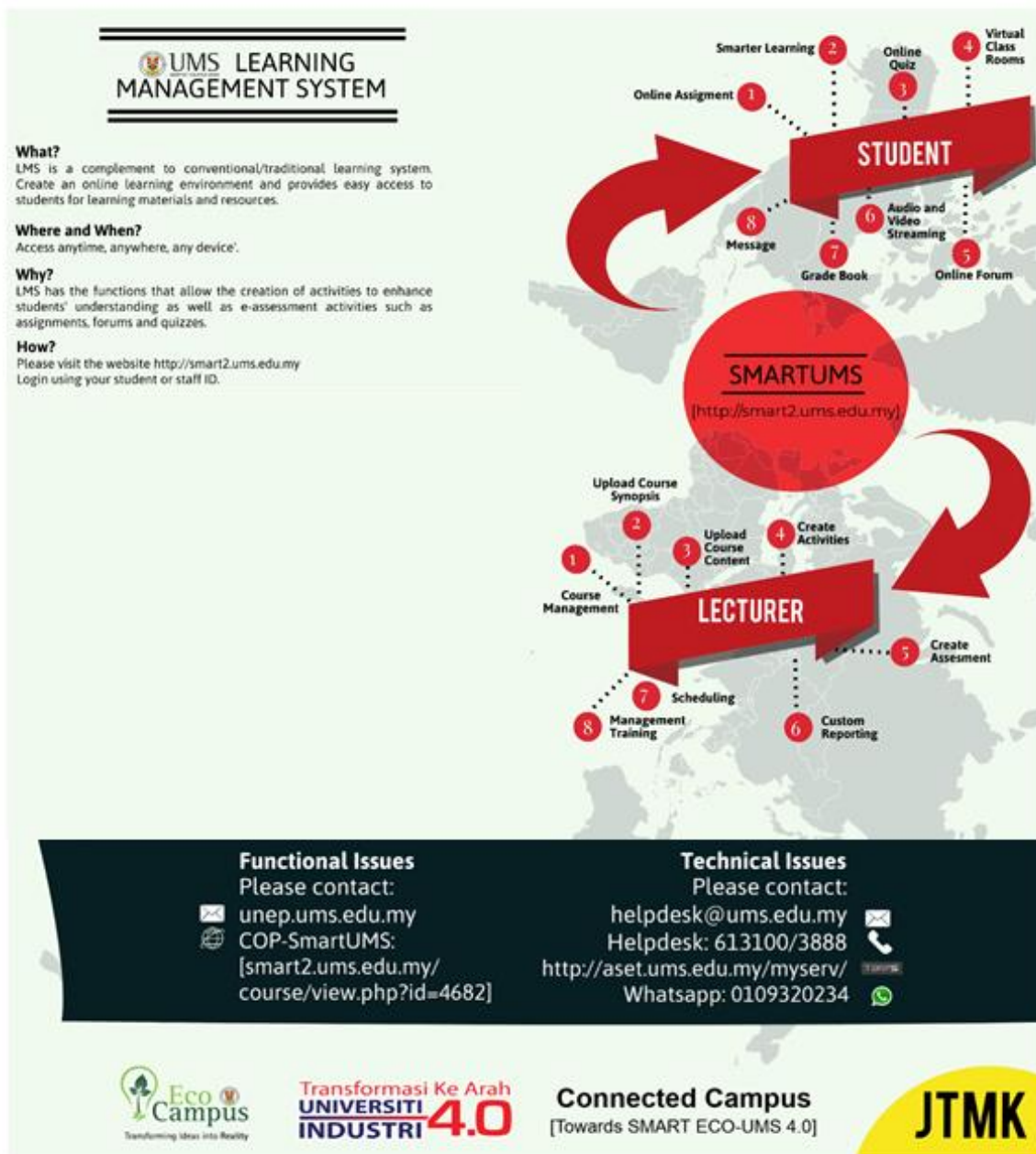


Figure 7: Introduction to the LMS at UMS

2.8 Software installation

Figure 8 shows a pictograph on the software installation flowchart.

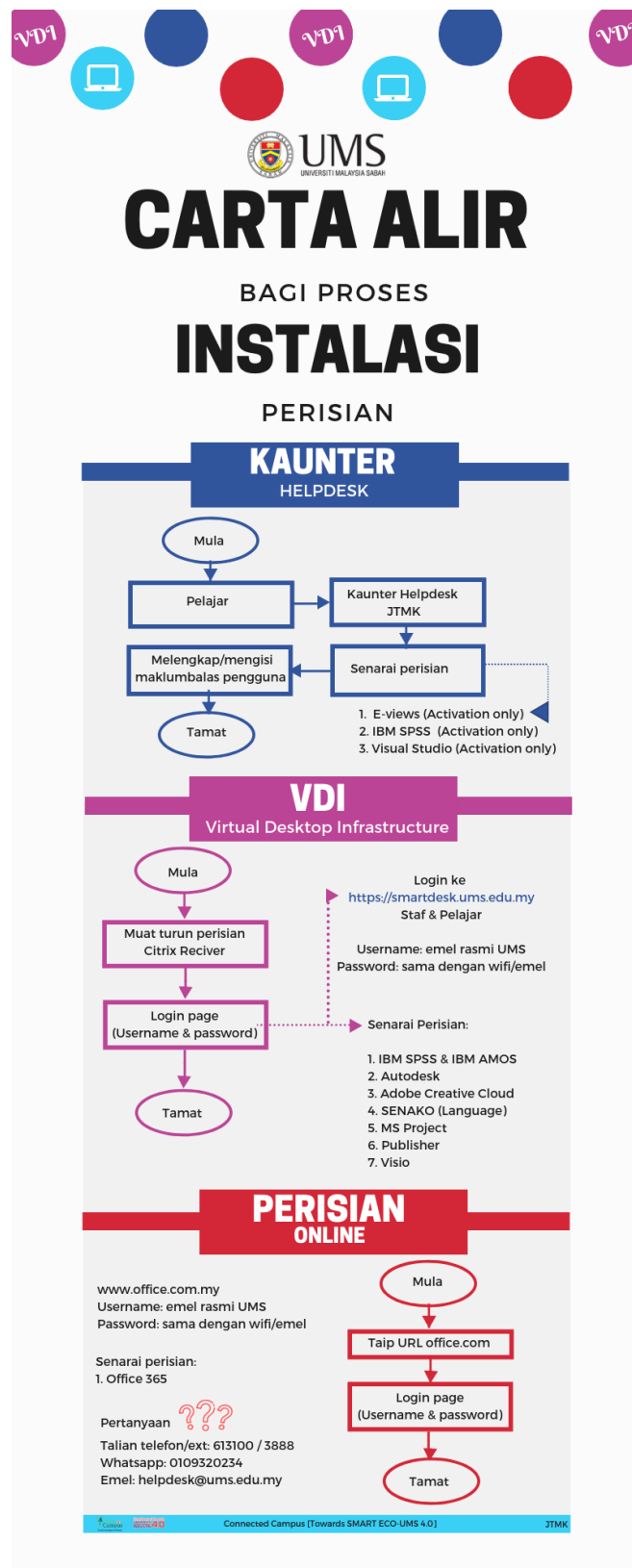


Figure 8: Software installation flowchart

CHAPTER 3: Blended Learning

3.1 Introduction to blended learning

Since the beginning of time humans have been constantly interacting with their surroundings, and they have willingly - and sometimes unwillingly - adapted their behaviour in order to cope with changes over time. These changes have been both challenging and demanding, as the current move to embrace Industrial Revolution 4.0 illustrates. Such remarkable changes have transformed the way people perceive things and how they digest information and react to situations and conditions. The magnitude and degree of such revolutionary change can be as overwhelming as it is inevitable. It can affect the general fabric of society and culture in many ways and forms, even down to the way people experience, learn and unlearn knowledge and skills. All these changes and their impact have left us with the notion that societies are becoming increasingly and dynamically connected across time and space. We can no longer presume a *ceteris-paribus* mind-set where 'everything else is unchanged'; instead we need to embrace the *omnia mobilis* paradigm that 'everything is moving.' In the context of change, blended learning can be considered both evolutionary and revolutionary. While the basic construct of hybrid learning is not new, the implementation can be considered as disruptive innovation, and this has fuelled both hype and hope about blended learning on campus.

Blended learning combines both traditional classroom-based methods and online educational materials, tools and resources with the presence of both teacher and student. The environment of BL takes the form of computer-mediated activities for content and delivery of learning materials as part of the conventional face-to-face classroom. While there is no single universal concept of what blended learning truly encapsulates, we can safely consider that it is an interesting alternative learning process that is in-sync with the modern Internet-based world in which we live.

Cleveland-Innes & Whiton (2018) point out that many factors must be considered when choosing how to blend face-to-face and online teaching and learning activities. Most interactions between students and the teacher, including direct instruction, take place in person in the classroom, while materials and additional activities are delivered online. In other cases, most of the class activities occur online, with infrequent face-to-face meetings held to solve problems and facilitate community building. In some blended arrangements, students may choose which activities to complete online and which to complete in the classroom.

Ideally, blends are personalised so individual students will end up with the blend that best fits their age, life circumstances and learning needs. These are called *à la carte* models. Students choose what to take fully online, what to take fully in person and, when the design is available, blended courses where they choose when to go to in-person classes and when to watch videos, download readings and complete assignments online. This kind of personalisation is not always available. It is most important to ensure that students are able to function well as learners with any delivery method, single-mode or blended, even if it is not their preference or the best situation for them. Teachers are valuable coaches for helping students manage in any learning situation, and it is up to teachers and learning designers to offer blended activities that best suit the subject, the learners' needs and the

curriculum requirements. Not all unique and interesting blended learning designs conform to the one-size-fits-all model.

O’Connell (2016) devised seven sample blended learning activities for higher education, which lecturers may or may not have already adapted for use in the classroom.

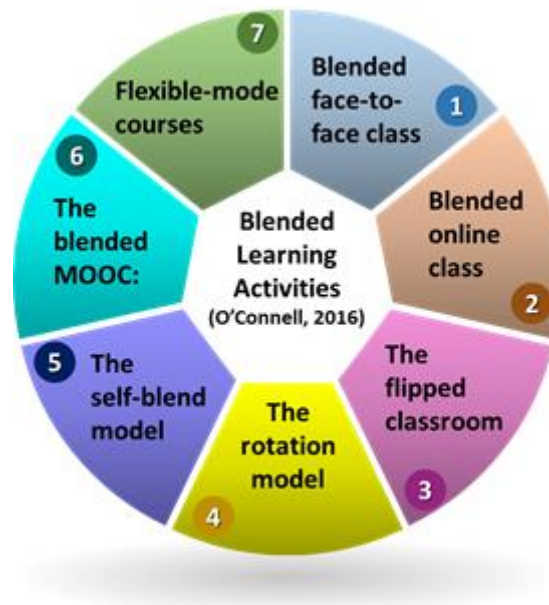


Figure 9: Configuration of blended learning activities

1. Blended face-to-face class:

Also sometimes called the “face-to-face driver model,” the blended face-to-face class model is based in the classroom, although a significant amount of classroom time has been replaced by online activities. Sitting time is required for this model, while online activities are used to supplement the face-to-face classes; readings, quizzes or other assessments are done online at home. This model allows students and faculty to share more high-value instructional time because class time is used for higher-order learning activities such as discussions and group projects.

2. Blended online class:

Sometimes referred to as the “online driver model,” this class is the inverse of the blended face-to-face class. The class is mostly conducted online, but there are some required in-person activities such as lectures or lab sessions.

3. The flipped classroom:

The flipped classroom reverses the traditional class structure of listening to a lecture in class and completing homework activities at home. Students in flipped classes watch a short lecture video online and come into the classroom to complete activities such as group work, projects or other exercises. The flipped classroom model can be seen as a sub-model of the blended face-to-face or blended online class.

4. The rotation model:

In this model, students on a course rotate between various modalities, one of which is online learning. There are various sub-models: *station rotation*, *lab rotation* and *individual rotation*. Some of these sub-models are better suited to K–12 education; station rotation, for example, requires students to rotate between stations in the classroom at the instructor’s discretion. Others work well on a college campus; the lab rotation model, for example, requires students on a course to rotate among locations on campus (at least one of which is an online learning lab). In the individual rotation model, a student rotates through learning modalities according to a customised schedule.

5. The self-blend model:

While many of the blended learning models on this list are at the course level, self-blending is a programme-level model and is familiar to many college students. Learners using this model are enrolled in a school but take online courses in addition to their traditional face-to-face courses. They are not directed by a faculty member and choose which courses they will take online and which they will take in person.

6. The blended MOOC:

The blended MOOC is a form of flipped classroom using in-person class meetings to supplement a massive open online course. Students access MOOC materials — perhaps from another institution or instructor if the course is openly accessible — outside of class and then come to a class meeting for discussions or in-class activities. In 2012, according to Campus Technology, San Jose State University piloted a blended MOOC using MIT’s *Circuits and Electronics* course, with students taking the MOOC out of class, while face-to-face time was used for additional problem solving (La Martina, 2012).

7. Flexible-mode courses:

Flexible-mode courses offer all instruction in multiple modes — in person and online — and students choose how to take their course. An example of this is San Francisco State University’s hybrid flexible (HyFlex) model, which offers classroom-based and online options for all or most learning activities, allowing students the ability to choose how they will attend classes: online or in person (Beatly, 2016).

In order to have the benefits of both worlds - face-to-face learning and online learning - it is possible to combine both types in the form of ‘blended learning’. The blended learning combines the

benefits of traditional face-to-face classroom with those of online teaching-learning. The very purpose of having blended learning is to maximise interaction and engagement with the learning resources.

3.2 Role of the learner

Technology integration in itself is not necessarily blended learning. If online learning is only a minor component of a classroom-based course, without offering students the independence, convenience and interaction opportunities of being online, it may not really be a blended learning system but simply a case of technology integration. The most important component in blended learning is the 'element of student control,' which highlights the shift in instructional models towards increased student-centred learning, whereby students have increased control over the time, place, path, and pace of their learning.

In a blended learning environment, students must own their learning and be allowed to spend a certain amount of time, for instance one hour per week, researching or working on subjects of particular interest to them. This goes beyond classroom learning to a place where students can generate their own ideas and have the freedom to study topics that are really important to them, while also learning about them with assistance from the lecturer. In BL, students are encouraged to be the curator, collaborator and scholar in their quest for knowledge.



Figure 10: Examples of the student's role in blended learning

Curator - Students must own their data, through for example, a process of reflection and goal-setting. Blended learning also involves constructivism: students construct their own knowledge rather than depending on others to design teaching-learning strategies for them.

Collaborator - Students must become collaborators. Virtual rooms or boards can be used to facilitate collaboration opportunities. Since collaborating involves communicating, students need to participate in web-based communication in the classroom. In this way students will be able to engage, interact and contribute to learning in new ways.

Scholar -The Co-Creator of Knowledge. Students must become researchers, and thus time is allowed for research leading to more student-led learning. Students must also become creators. Hence, they are granted the freedom to explore and create in various ways using both traditional and online or technology activities. You may have the opportunity to interact and collaborate, but this does not

guarantee you a deep and meaningful learning experience; for example, if you merely take information from web-based resources and duplicate it in a discussion forum, you will likely fail to develop a deeper understanding of the subject. Students need to understand that they are not merely learners but also ‘co-creators of knowledge’. They are all members of the ‘learner community’.

3.3 Expectations from learning

According to Cleveland-Innes & Whiton (2018), the advantages of blended learning for students include increased learning skills, greater access to information, improved satisfaction and learning outcomes, and opportunities both to learn with others and to teach others. Recent research identifies the following key benefits of blended learning:

1. **Opportunities for collaboration at a distance:** Individual students work together virtually in an intellectual endeavour as a learning practice.
2. **Increased flexibility:** Technology-enabled learning allows for learning anytime and anywhere, letting students learn without the barriers of time and location but with the possible support of face-to-face engagement.
3. **Increased interaction:** Blended learning offers a platform to facilitate greater interactivity between students, as well as between students and teachers.
4. **Enhanced learning:** Additional types of learning activities improve engagement and can help students achieve higher and more meaningful levels of learning.
5. **Learning to be virtual citizens:** Learners practice projecting themselves socially and academically in an online community of inquiry. Digital learning skills are becoming essential for a lifelong learner, and blended courses help learners master the skills for using a variety of technologies.

3.4 Dos and Don'ts

Vaughan, Cleveland-Innes, & Garrison (2013) have listed some of the dos and don'ts of studying via blended mode. If you follow them, you will be able to make the most of the learning opportunity given to you.

1. Do more than simply stating agreement or disagreement. Justify and support your opinion. The most persuasive opinions are supported by evidence, examples, reasons and facts. If you disagree with something, say why.
2. Do the appropriate preparation, such as reading and class activity work, before joining the discussion.
3. Keep your comments fairly brief. A paragraph or two is plenty unless you are posting something that, by nature, has to be longer – a short story, for example.
4. Check your message before you send it. Pay attention to your spelling and grammar, and be sure your message makes the point you want in a clear and concise way. Remember, other students and instructors can read your messages.
5. Help move the discussion along. When contributing to a discussion, read other people's comments first. Introduce new ideas, but also build on what others have said (“piggy-back” on other's ideas)

6. Keep up with the discussion throughout the course. After you have made your contribution on a topic, check back a few times to find out how the discussion is evolving. Does someone's comment make you think twice about your view?
7. Share your experience with your fellow students. You may be able to offer advice to someone who is new to the course.
8. Respect other students's ideas and opinions. Feel free to disagree, but express your disagreement in a respectful manner.
9. Be positive while offering advice. If one of your fellow students posts something to be edited or asks for your opinion on a piece of writing, be encouraging with your comments. If you see weaknesses in someone's writing or ideas, focus on describing the strengths first before moving on to the opportunities for improvement. Put yourself in the shoes of the other people in the forum discussions.
10. Be gracious when receiving advice. When you post your work, you are hoping that other people will tell you what you have done well and suggest useful ideas about how to do even better. When others are critical, assume that they are trying to provide a critique, not criticism in the negative sense. Even if they don't seem diplomatic, be gracious in response.

3.5 Challenges to Implementation

In order to ensure that BL produces the desired impact at management level, certain crucial elements need to be considered at both the planning and execution stages. If this is not done, technical problems could occur in the early stages, since BL set up is heavily dependent on technical resources and tools for successful implementation. Issues related to reliability, ease of use, version compatibility and other technical matters can negatively impact on the student's learning process and experience. Therefore, the thorough planning and proper execution of BL is of the utmost importance.

From the student's perspective, information technology (IT) can present a significant challenge, especially for those who experience difficulty in accessing online course materials; they will demand top quality technical support at the implementation and execution levels of BL. Technicians who are responsible for managing BL platforms should be able to anticipate arising technical matters and address any shortcomings accordingly so that the expected results from the BL are achievable at the execution stage. Students and educators will need to play proactive roles to ensure a successful outcome. A minimal age gap between junior and senior educators, and an equally high receptiveness to using IT in teaching might ensure smoother BL implementation. This is especially true when e-learning platforms are perceived as 'time-consuming' compared to those utilised for traditional teaching and learning. Furthermore, e-learning platforms may be considered more costly and difficult to prepare and service. The challenges may be even more significant if the demands on network infrastructure are immense, to the extent that the network is incapable of handling the capacity needs of such a large bandwidth.

3.6 Conclusion

An orthodox classroom-confined and textbook-based learning environment enables students to learn theoretical and empirical facts from past and current studies, as well as lessons about how the world works from an economic perspective. Over the last two decades, this was considered to be sufficient, as gaining access to data and information beyond the confines of the classroom was not as cheap and easy as it is now.

'Thinking outside the box' is the new normal in a BL-environment as both instructor and student are frequently stepping outside their comfort zones. Hence, BL not only enables both facilitator and learner to connect the dots, but it also encourages them to spawn new and ground-breaking ideas about how to utilise knowledge and execute skills even more effectively and creatively.

The ever-growing availability of education resources with creative contents, supported by open-source communities has meant the proliferation of ready-made platforms that can be utilised to foster BL to the learner's advantage. With all these exciting BL tools at our disposal, there are clearly many benefits to be reaped, especially in the field of teaching and learning.

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CHAPTER 4: Smart UMS

4.1 Brief introduction to Smart UMS

Smart UMS is an online educational platform based on the MOODLE Learning Management System (LMS). MOODLE, itself, is an acronym for “Modular Object Oriented Dynamic Learning Environment”. As such, Smart UMS can be used by educators to create lessons, manage courses, as well as interact with their students and other educators, while students can use this platform to review the class calendar, submit assignments, take quizzes, and interact with their course instructors as well as their other classmates (Christensson, 2018).

4.2 A quick start guide to Smart UMS for students

A quick start guide for students has been developed by Dr. Liew Thor Seng and is available on Smart UMS at the following link: <http://smart2.ums.edu.my/user/index.php?id=8508>. The said quick start guide consists of a series of instructional videos which can be accessed using the links listed below.

Table 2: List of videos in the quick start guide for students on Smart UMS, and their respective links on YouTube

No.	Series	Title	YouTube Link	
1	Quick Start Guide for students	Login to SmartUMS and Enrol to a Course	https://youtu.be/690wpsT3KHs	
2		User Interface of Course Page	https://youtu.be/UzjEuOGtsxU	
3		Navigate the Course Page with Blocks	https://youtu.be/m4f_Eox7hKY	
4		Access Learning Materials	https://youtu.be/0DRZAqDVFeA	
5		Participate in the Discussion Forum	https://youtu.be/g7v-UfgGdGo	
6		Submit Assignment	https://youtu.be/Kpu7q6LlpjI	
7		Message Lecturers and Classmates	https://youtu.be/sY-uKarQX6U	
8		Un-enrol Yourself from a Course	https://youtu.be/_eicaeLSPiM	
9		Check Your Grouping Information in a Course	https://youtu.be/loqmC3XOo7M	
10		Upload and Post Image in Forum Discussion	https://youtu.be/oQ7NJrocGTU	
11		Forum Rate Posts in Forum	https://youtu.be/OowBNox38QA	
12		Monitor Your Learning Progress and Restrict Access of Learning Content	https://youtu.be/jQd7uFYo3gA	
13		Access and Save Learning Resources from SmartUMS into Your Own Computer	https://youtu.be/KY3Mlfbpds	
14		Access and Save Learning Activities from SmartUMS into Your Own Computer	https://youtu.be/vEDOaJPleeE	
15		Using Forum with Group Settings	https://youtu.be/WriXDHyutyc	
16		Student Edit and Resubmitted Assignment	https://youtu.be/Bn2gVQIfm7g	
17		-	Save YouTube Videos Offline	https://youtu.be/0Ri6ETFXgcM
18		-	Changing the Speed of YouTube Video	https://youtu.be/gVm31SSjgQQ

CHAPTER 5: Open Educational Resources

5.1 Introduction

In its simplest form, the concept of Open Educational Resources (OER) describes any educational resources (including course materials, textbooks, videos, multimedia applications and any other materials that have been designed for use in teaching and learning) that are openly available for use by educators and students, without an accompanying need to pay royalties or license fees. OER has emerged as a concept with great potential to support educational transformation. While its educational value lies in the idea of using resources as an integral method of curriculum communication in educational courses, its transformative power lies in the ease with which such resources, when digitised, can be shared via the Internet. Importantly, there is only one key differentiator between an OER and any other educational resource: its license. Thus, an OER is simply an educational resource that incorporates a license that facilitates reuse, and potentially adaptation, without first requesting permission from the copyright holder.

According to UNESCO, OER are “teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions” (Green, 2012). These are any type of learning resources, including curriculum course materials, textbooks, videos, multimedia applications, podcasts and presentations (Butcher, 2011).

5.2 Why should students use OER?

As more OER are created and shared, people have access to a wealth of educational materials that can enhance their learning opportunities and give them more independence and a range of flexible learning opportunities (Kurelovic, 2016).

OER can be used as a supplementary resource to help students understand difficult concepts that are not clearly explained in traditional textbooks or not discernible from lectures. Student can go through course materials before their class, enabling them to be better prepared. They can source OER to enhance their assignments and projects, or they can access OER for supplementary reading in topics that are of particular interest to them. Some OER have built-in assessments, which allow students to check their understanding of key concepts. The resources can be accessed on demand, so they can be used repeatedly until the area of study has been mastered (Montgomery College Faculty, 2017). OER can also help students reinforce what they have learned and further develop their level of understanding in a subject area (Kurelovic, 2016). As they have access to resources from across the world and from different contexts, student can see and apply knowledge in a wider context than their course would otherwise allow – for example, they can gain an international perspective on a subject.

Many OER are of good quality. Some have been evaluated by experts, while ratings and comments have been posted on some OER sites (Montgomery College Faculty, 2017). Of course, as with everything else, when student access the Internet, they must evaluate the quality of an OER before deciding whether to trust it. OER are generally very accessible. As they are usually digital, they

are often available right away, so resources are often current. Also, there is frequently less turnaround time after changes or updates are made, so updated materials are usually made available immediately. This is useful for getting current, up-to-date information, and is also very helpful for making research results available without delay to showcase them to the widest possible audience. Another benefit of OER is that they often respond to the different learning styles of students. Resources are presented in a few different ways – for example, in a video format or in three dimensions, which can be useful if students learn more visually. Students can interact with their peers across the world and develop a more collaborative approach to learning. This also provides them with an opportunity to work across sectors, institutions and subject disciplines, thus enhancing their learning opportunities. This encourages students to work in ways that are increasingly in demand in the 21st century workplace, which brings further long-term benefits.

Create OER as part of the learning process

Content created by students during learning activities could form part of OER. People can adapt and manipulate OER, so they can be valuable resources when they are completing projects and assignments.

For example, people can:

- take a Geography textbook and add examples and landmarks from their own region;
- translate a storybook into another language;
- create new illustrations for an existing story in an art class; or
- make a new, modified version of their work available to the public – a wonderful way to share work with other students.

Figure 11: OER as part of the learning process

5.3 Creative Commons (CC) licenses

The most commonly used open license is the Creative Commons (CC) license (see <https://creativecommons.org>). Creative Commons have released several different copyright licenses, which allow creators to communicate which rights they reserve, and which rights they waive for the benefits of users or other creators. Creative Commons licenses comprise four usage conditions, which can be mixed and matched to form one of six licenses.

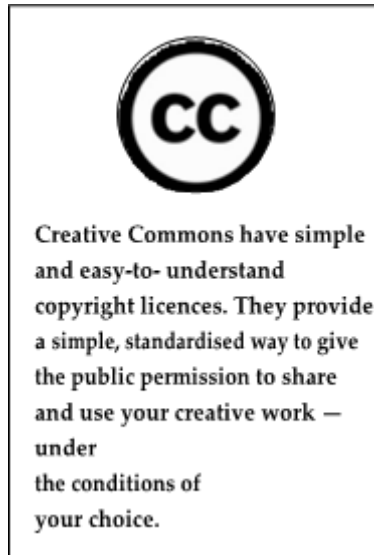


Figure 12: Creative Commons

Table 3: Creative Commons License usage conditions

	<p>The Attribution license means people can share, copy, redistribute, display, perform, remix and tweak the work if they give credit to the creator.</p>
	<p>The No Derivative Works license means that people can share, copy, redistribute and display the work if they do not change it or create derivative works.</p>
	<p>The Share Alike license means that people can share, copy, redistribute, display, perform and remix the work as long as they keep the same license when they share the resource.</p>
	<p>The Non Commercial license means that people can share, copy, redistribute, display, perform, remix and tweak the work as long as they do not use this work for commercial purposes.</p>

These licenses (represented by four symbols) offer the student more flexibility to share, copy, redistribute and display work than copyright law normally allows. The four terms can be mixed in different combinations, which define the way in which others may freely and legally share, modify or build upon a copyrighted work.







 <p>Attribution (CC BY)</p>	<p>This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of licenses offered.</p>
 <p>Attribution-ShareAlike(CC BY-SA)</p>	<p>This license lets others remix, tweak, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under the identical terms. This license is often compared to “copyleft” free and open source software licenses. All new works based on your works will carry the same license, so any derivatives will also allow commercial use.</p>
 <p>Attribution-NoDerivs(CC BY-ND)</p>	<p>This license allows for redistribution, commercial and non-commercial, as long as it is passed along unchanged and in whole, with credit to you.</p>
 <p>Attribution-NonCommercial(CC BY-NC)</p>	<p>This license lets others remix, tweak, and build upon your work non-commercially, and although their new works must also acknowledge you and be non-commercial, they don't have to license their derivative works on the same terms.</p>
 <p>Attribution-NonCommercial-ShareAlike(CC BY-NC-SA)</p>	<p>This license lets others remix, tweak, and build upon your work non-commercially, as long as they credit you and license their new creations under the identical terms.</p>
 <p>Attribution-NonCommercial-NoDerivs(CC BY-NC-ND)</p>	<p>This license is the most restrictive of our six main licenses, only allowing others to download your works and share them with others as long as they credit you, but they can't change them in any way or use them commercially (Creativecommons.org)</p>

Figure 13: Six Creative Commons licenses. Source: (Creative Commons, n.d.)

5.4 How to search for OER using a search engine?

A fast way to search for materials authorised for use by others, and to start to comprehend what this implies is to utilise the 'advanced' search alternatives in Google: a drop down box at the base of the Google advanced search page enables student to channel openly accessible materials, be they pictures, recordings or other media. However, be careful: standard, unfiltered searches in web indexes will return copyrighted materials. Obviously, nothing beats obtaining the immediate consent of the copyright holder (Mossley, 2013).

Anyone can create an OER and share it online, so the field of resources available online is constantly growing. One problem with this growth is that there is no single comprehensive listing of all the OER. Some helpful places to start when searching for OER are:

5.4.1 Google Advanced Search

URL: https://www.google.com/advanced_search

Allows people to search for Creative Commons material by keyword and refines results to show only material available under certain Creative Commons licenses.



Figure 14: Google Search bar

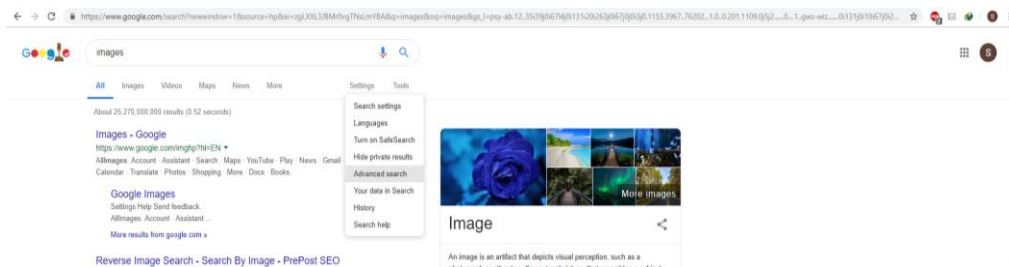


Figure 15: Settings tab on the results page.

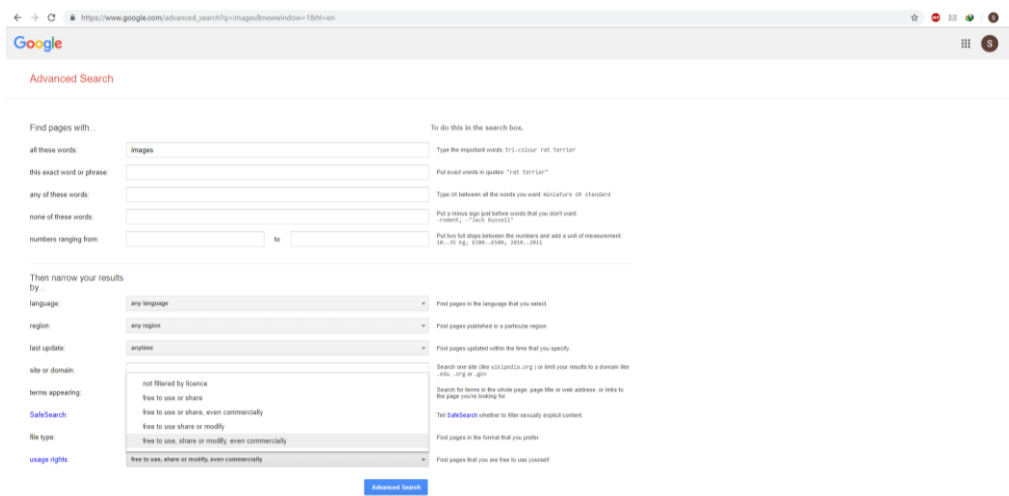


Figure 16: Usage rights

5.4.2 Creative Commons Search

URL: <https://search.creativecommons.org>

Offers convenient access to search services provided by other independent organisations. It is designed and hosted by Creative Commons and offers images, media, videos, music and Web content search tools.

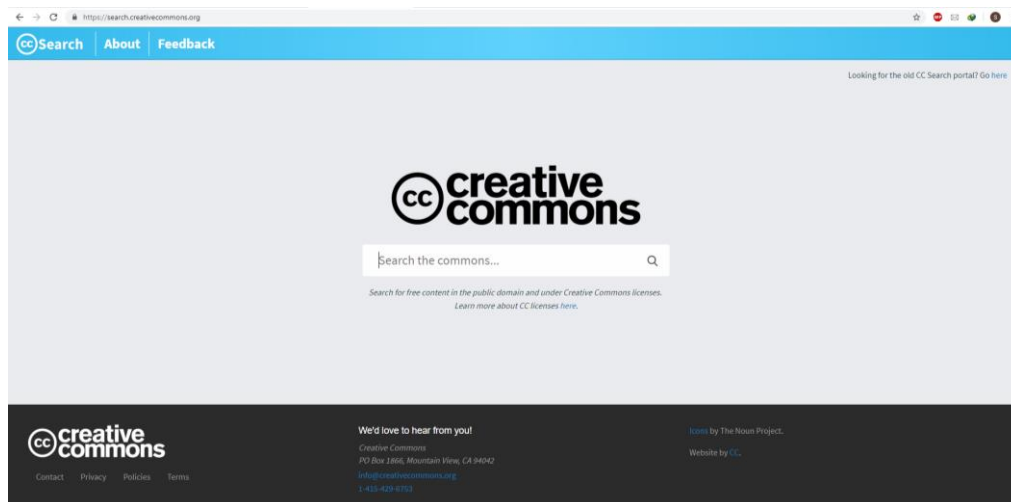


Figure 17: Creative Commons search

5.4.3 Wikimedia Commons

URL: https://commons.wikimedia.org/wiki/Main_Page

A network of shared teaching and learning materials made freely available online. OER Commons can be used to find free to use teaching and learning resources from around the world.



Figure 18: Wikimedia Commons

5.4.4 Flickr

URL: <https://www.flickr.com>

Many Flickr users have chosen to offer their work under a Creative Commons license, and browse or search through content under each type of license.

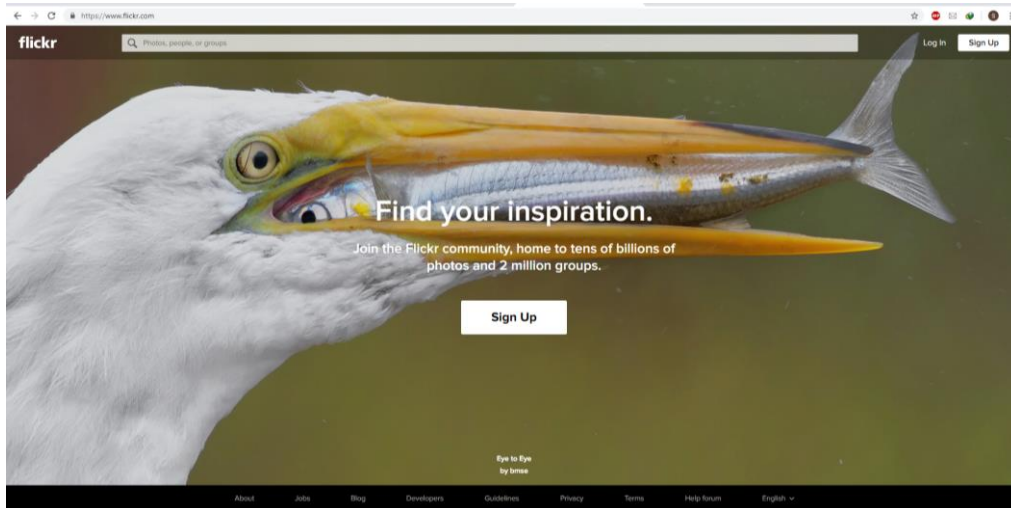


Figure 19: Flickr

5.5 How do I cite OER?

It is important to cite all sources of reference. Not citing your sources is plagiarism. Below are step-by-step procedures on how to do citations.

Citing simply means acknowledging the sources of information that students use during their research. Sources can include journal articles, books, documents, websites, interviews and videos (Margam, 2016). It is how authors inform their readers where they found a resource referred to in a research article or other published work. Certain basic information about the source must be included in the citation: the author, year of publication, and page number or page range. Citing is required in all academic texts, and a complete list of citations must be included at the end of the work as a list of references. There are different formats for citing and referencing, so use the format style that is required by the institution or department (Fong and Kenneth, 2010; Kenneth, 2019).



Figure 20: Citation from YouTube

5.5.1 How to cite YouTube videos using Microsoft Word

1. Open a Microsoft Word file. Go to “Menu References”, click “Insert citation” (Figure 21) then select “Add New Source” (Figure 22).

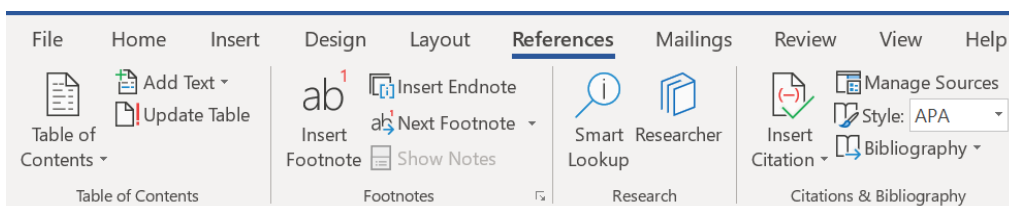


Figure 21: Inserting citations using Microsoft Word

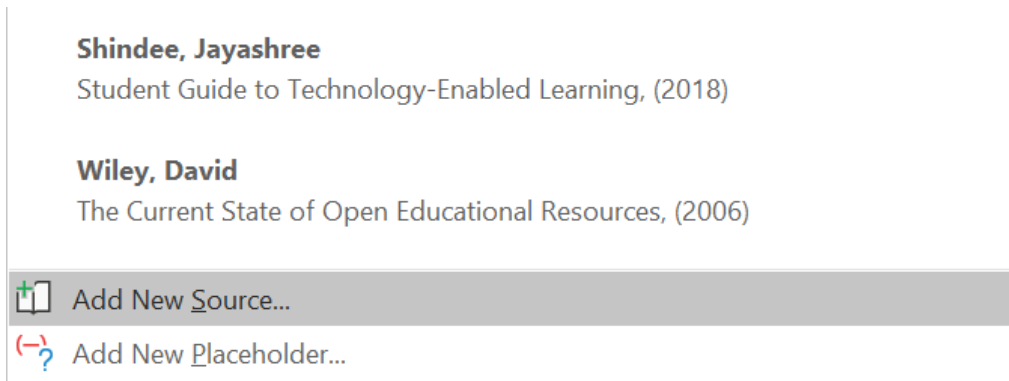


Figure 22: Adding a new source

2. Click the drop-down list on “Type of Source” then select Website (Figure 23).

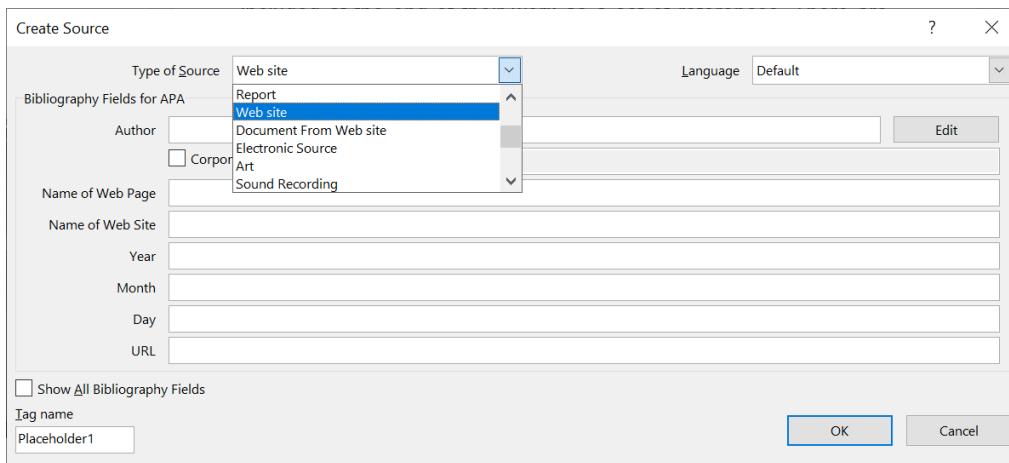


Figure 23: Choosing type of source

3. Then fill in the details (author, name of web page, name of website, year, month, day, and URL) (Figure 24). The citation will automatically be displayed.

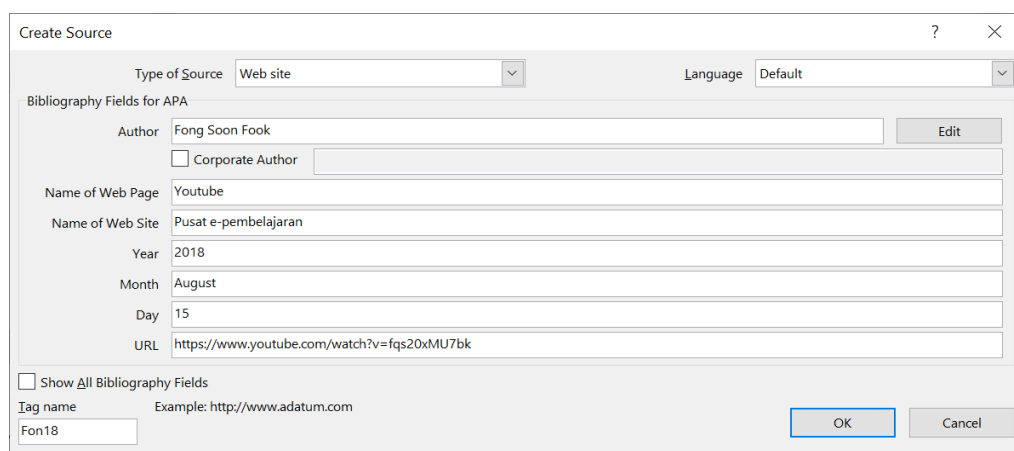


Figure 24: Filling in the details

5.6 Selecting appropriate format and tools

It was noted earlier that OER can include slides, hand-outs and videos. A range of ICT Tools are available for developing these different OER (for example, developing text documents requires the use of different tools from those used to develop images or videos). Thus, before selecting the tool, students also need to determine what format their remixed OER will be in, i.e. a document, presentation, video or some other suitable format. Open Professional Collaboration for Innovation has developed an excellent resource outlining the ICT tools required to develop and adapt different types of OER. (See http://openrof.eu/training-material/ICT_tools_to_develop_and_adapt_OER for more information). It is important to note that file format matters, especially during OER production. Whatever the resource, if it is not in a suitable format, other students might not be able to use it. If students want others to be able remix and reuse the resource they created, they need to make sure that the file format that they have chosen to save the work in is open and editable. When the file format is kept open, the OER will not inadvertently “lock up”. For example, when using images, it is a good idea to use open source software - or when saving others’ images, ensure that they are saved as a TIFF or PNG file, as these formats are more conducive to editing.

5.7 How to apply a Creative Commons license to your remix

If students prefer to choose a Creative Commons license for their remix, they should go to <http://creativecommons.org/choose> and follow the easy steps listed there. The license tool will help students to work out the most appropriate license. The generator provides license information and appropriate license graphics that can be pasted into any electronic document — or, alternatively, HTML code that can be embedded into a student website or document.

5.8 Attributing sources

Attribution is about crediting a copyright holder according to the terms of a copyright license, usually crediting artistic works like music, fiction, video and photography. Creative Commons highlights some best practices for attribution, combined under the acronym (TASL), which stands for Title, Author, Source, and License.

- Author: name the author(s). In some instances, the licensor may request the student to give credit to another entity, like an organisation or company, so the work should be attributed in the manner specified by the author or licensor.
- Source: provide the source of the material (usually a URL or hyperlink) so that others can find the original material.
- License: mention the specific license of the material. Remember, there are six different Creative Commons licenses. It is not enough to just state that the material is Creative Commons as this does not specify how the material can be used.

5.9 OER repositories

The following is a list of OER repositories that are in compliance with open licensing.

Table 4: OER repositories

NAME OF REPOSITORY	URL
AFRICA	
African Storybook	http://www.africanstorybook.org/
African Virtual University	http://oer.avu.org/
Kwame Nkrumah University of Science and Technology OER	http://websys.knust.edu.gh/oer/pages/
MaliMath (M ²)	http://www.malimath.net
OER Africa	www.oerafrica.org
Siyavula	http://www.siyavula.com/work-oer.html
Teacher Education in Sub-Saharan Africa (TESSA)	http://www.tessafrica.net/
Thutong	http://www.thutong.doe.gov.za/
Young African Research Arena	http://www.yararena.org/
ASIA AND THE PACIFIC	
Davalgaa	http://www.davalgaa.mn/
First Steps	www.det.wa.edu.au/stepsresources/detcms/portal/
Fossee	http://fossee.in/
Information and Library Network (INFLIBNET) e-PG Pathshala	http://www.inflibnet.ac.in/epgp/
Karnataka Open Educational Resources	http://karnatakaeducation.org.in/KOER/en/index.php/Main_Page
Lib.kg	http://lib.kg/
National Repository of Open Educational Resources	http://nroer.gov.in/welcome
Netaji Subhas Open University Repository	http://nsouoer.krc.net.in
NPTEL	http://nptel.ac.in/
Odisha State Open University	http://osou.ac.in/e-resources.html

Open Educational Resource Library	http://oer.learn.in.th
Open Textbooks for Hong Kong	http://www.opentextbooks.org.hk/
Scoutle	http://www.scoutle.edu.au/ec/p/creativeCommons
Spoken Tutorial	http://spoken-tutorial.org/
Storyweaver	https://storyweaver.org.in
Telangana Open Educational Resources	http://troer.telangana.gov.in/OER/
Tess India	http://www.tess-india.edu.in/
Thailand Massive Open Online Course (ThaiMOOC)	http://www.thaimooc.org
The Open University of Sri Lanka	http://oer.ou.ac.lk/
UNESCO-UNIRWIN Handong Global University	http://uuooi.org/english/portal.php
University of the South Pacific	http://openedu.usp.ac.fj/
Universitas Terbuka OERs	http://www.ut.ac.id/OER/index.html
Vietnam Open Educational Resources	http://voer.edu.vn
Virtual Labs	http://vlab.co.in
Virtual University Open Courseware	http://ocw.vu.edu.pk/
Wawasan OER Repository	http://weko.wou.edu.my/
Universiti Malaysia Sabah OER	http://oer.ums.edu.my
EUROPE AND NORTH AMERICA	
Alberta OER	http://albertaoer.com/
Athabasca OCW	http://ocw.lms.athabascau.ca/
BC Campus OpenEd	https://open.bccampus.ca
Biology Courses	http://www.biologycourses.co.uk/
Centre for Open Educational Resources and Language Learning	http://www.coerll.utexas.edu/coerll/
Curriki	http://www.curriki.org/
Del Rett	http://delrett.no/
Ecampus Ontario	https://openlibrary.ecampusontario.ca/

Edutags	http://www.edutags.de
Learning Objects for Healthcare – University of Nottingham	http://sonet.nottingham.ac.uk/rlos/rolist.php
Lumen Learning	http://lumenlearning.com/
Merlot (Multimedia Educational Resource for Learning and Online Teaching) (II)	https://www.merlot.org/merlot/index.htm
MIT Open Courseware	http://ocw.mit.edu
National Science Digital Library	https://nsdl.oercommons.org/
NDLA OER for secondary schools	http://ndla.no/
OER Commons	http://oercommons.org/
OER Sverige	http://oersverige.se/
Open Access Oxford	http://openaccess.ox.ac.uk/
Open Archives	http://www.openarchives.gr/
Open Education Europe	https://www.openeducationeuropa.eu/
Open Educational Practices	http://www.oeps.ac.uk/
Open Professionals Education Network	https://open4us.org/find-oer/
Open Textbook Library	http://open.umn.edu/opentextbooks/
Openstax CNX	http://cnx.org/
Projekt eL4	http://el4.elan-ev.de/plugins.php/mooc/courses/overview
Raspberry Pi	https://www.raspberrypi.org/resources/
Saylor Academy	https://www.saylor.org/tag/oer/
Sickle Cell Open	http://www.sicklecellanaemia.org/
Siemens Stiftung	https://medienportal.siemens-stiftung.org/
Skills Commons	https://www.skillscommons.org/
Slovenian e-textbooks for primary and secondary schools	https://eucbeniki.sio.si/
SOL*R BC Campus	http://solr.bccampus.ca/wp/

The Coalition for Open Education	http://koed.org.pl/en/
The Orange Grove	http://florida.theorange Grove.org/
University of Edinburgh OER (OpenEd)	http://open.ed.ac.uk
VideoLectures.NET	http://videlectures.net/
Wolnelektury	https://wolnelektury.pl/
LATIN AMERICA AND THE CARIBBEAN	
Agrega	http://www.agrega2.es/web/
Arca	http://arca.fiocruz.br/
Campus Virtual de Saúde Pública	http://brasil.campusvirtuaisp.org/repositorio
Ciênciação	http://ciensacao.org
Curriculum en linea Recursos para el aprendizaje	http://www.curriculumenlineamineduc.cl
Design Thinking	http://www.dtparaeducadores.org.br/
Educacao Aberta	http://educacaoaberta.org/
eduCapes	https://educapes.capes.gov.br
Fiocruz	https://portal.fiocruz.br/pt-br
Iniciativa Educação Aberta	http://aberta.org.br/
La Referencia	http://www.lareferencia.info/joomla/en/
Open campus	http://opencampus.utpl.edu.ec/
Open Education	www.educadigital.org.br
Open Michigan	http://open.umich.edu/
Open Osmosis	https://open.osmosis.org/
Pioneiro	http://www.pioneiro.com.br/pioneirodigital/
Portal del Repositorio Institucional de la Universidad de Los Andes	http://www.saber.uLa.ve
ProEva	http://proeva.edu.uy/recursos-abiertos/nucleo-interdisciplinariosobre-recursos-educativos-digitales-abiertos-y-accesibles/
REA Dante	https://www2.colegiodante.com.br/rea/

Recursos Educacionais Abertos no Brasil	http://www.rea.net.br/site/comunidade-rea-brasil/
Temoa	http://www.temoa.info/es
MIDDLE EAST AND NORTH AFRICA	
Saudi OER Network	https://shms.sa
GLOBAL	
Commonwealth of Learning's Open Access Repository	http://oasis.col.org
Directory of OER Repositories	http://doer.col.org/
Directory of Open Access Journals	https://doaj.org/
Global Digital Library	http://digitallibrary.io/
Global Text Project	http://globaltext.terry.uqa.edu/
OER Knowledge Cloud	http://oerknowledgecloud.org
OERu	https://oeru.org/

Source: (Shindee, 2018)

5.10 Conclusion

This chapter has acquainted students with the idea of OER and how to take advantage of these resources to further their education and learning process. Students have also been briefed on Creative Commons Licenses and learned how to utilise these assets. All learning materials are copyrighted, and authorisation is needed if the intention is to reuse, amend or redistribute them, except if the concerned learning material is not accessible with an open license.

CHAPTER 6: Social Media for Learning

6.1 The Internet

The Internet (short for interconnected network) is a global system of interconnected computer networks utilising the Internet protocol suite (TCP/IP) to connect devices together. Initially developed as a robust, fault tolerant means of communication between computer networks in the 1980s, the Internet's precursor (ARPANET) was developed for the sole purpose of linking academic and military networks. Combined with the funding from private entities and worldwide participation in the development process, new networking technologies were developed and the ARPANET expanded to enable interconnection with other networks outside academia and the military until it became what is now known as the Internet. As such, anyone with access to the Internet can upload and access content stored on devices connected to the Internet at any time, and can share them with other Internet users, provided that they have the proper credentials to access the said contents and that the device hosting the said contents is still available on the network. One of the many things brought about by the Internet is the rise of social media.

6.2 Regulation of the Internet

As with any forms of technology, the Internet can potentially be misused (intentionally or otherwise) by individuals and/or entities for various reasons. As such, the use and access to the Internet is usually regulated by governments and organisations, to varying degrees depending on the government/organisation in question. In Malaysia, general access to the Internet is regulated by the government through the Malaysian Communications and Multimedia Commission (MCMC) under the Communications and Multimedia Act 1998 ("Malaysian Communications And Multimedia Commission (MCMC) | Suruhanjaya Komunikasi dan Multimedia Malaysia (SKMM) - Communications and Multimedia Act 1998 [Act 588]," n.d.). The commission is placed under the purview of the Ministry of Communications and Multimedia. In the context of UMS, access to the Internet via the University's network is controlled and regulated by the Department of Information Technology and Communication (JTMK).

6.3 Social media

Social media can be defined as platforms (usually online) which enable users to generate and share content, as well as participate in social networking activities. Although social media has been available before the birth of ARPANET, accessibility to the Internet has served as a catalyst to its rise in popularity. Consequently, there are now many social media platform available on the Internet and they can be generally classified into 13 categories as per Table 5 (Aichner and Jacob, 2015):

Table 5: Types of social media, brief descriptions and examples (adapted from Aichner and Jacob, 2015)

Type of Social Media	Description	Examples
Blogs	A chronological list of postings, which can be read and (in some cases) commented on by visitors.	Blogger.com (www.blogger.com)
Business networks	A platform used by both individuals and businesses. Individuals can establish and maintain professional contacts, as well as share personal details for potential employers. Businesses can use this platform to search for potential employees.	Linkedin.com (www.linkedin.com)
Collaborative projects	A platform to bring together Internet users with a common interest and/or knowledge in order to plan, develop, improve, analyse and/or test technological, academic, scientific or fun-oriented projects. The results obtained are usually distributed as open source and made available to the public for free.	Wikipedia.org (www.wikipedia.org)
Enterprise social networks	Similar to social networks, but the registration is limited to employees of the said company/organisation. Allow employees to get to know one another better and to facilitate the exchange of experiences and ideas, thus increasing the efficiency of knowledge management in the company/organisation.	Yammer (https://products.office.com/en-my/yammer/yammer-overview)
Forums	A virtual discussion platform. Registered users can ask questions, answer other users' questions, and participate in various discussions, though the communication does not occur in real-time (as opposed to chat rooms). Forum contents may or may not be publically visible.	Reddit.com (www.reddit.com)
Microblogs	A platform where posts are typically restricted to no more than 200 characters. Posts may include pictures, videos or web links. Users can subscribe to other users (individuals or companies/organisations) for updates by the said users.	Twitter (www.twitter.com)
Photo sharing	A platform which enables users to upload, manage and share pictures. Other users may comment on the content.	Flickr (www.flickr.com)
Products/services review	A platform that sells and provides information about the products sold. Customers may leave a review of a product, or read reviews left by other customers who bought the same product.	Amazon (www.amazon.com)

Social bookmarking	A centralised platform for users to save and organise Internet bookmarks. Users can subsequently share these bookmarks with their friends or other users.	Pinterest (www.pinterest.com)
Social gaming	Online games (or games with online mode) that allow or require social interactions between players.	Dota 2 (www.dota2.com)
Social networks	A platform that connects users who know one another, share common interests or would like to engage in similar activities. Each user will have an individual profile, which (depending on the privacy settings) can be searched and viewed by other users. Users can also upload pictures and videos. Companies/organisations may use social networks to promote their products and services to users.	Facebook (www.facebook.com)
Video sharing	A platform which enables users to upload, manage and share videos. Other users may comment on the posted pictures.	YouTube (www.youtube.com)
Virtual worlds	Online games whereby the virtual environments are populated by many users. Each user can create their own personal avatar. They can also either independently or simultaneously explore the virtual environments, participate in activities and interact with other users. In virtual worlds, the “worlds” time does not stop when the user logs out. Much like the real world, virtual worlds have their own virtual currencies (can be earned or purchased using real world currencies), which can be used to purchase in-game items or physical, real world merchandise.	Second Life (secondlife.com)

In addition to being governed by local laws and regulations, social media platforms generally have their own policies, as well as terms and conditions for the use of their services. Most social media platforms have an intuitive design and layout, as well as a basic tutorial on how to use the platform aimed at new users.

6.4 Social media for learning

Most Internet users use social media on a daily basis for various purposes, one of which is learning. Examples of this includes, but are not limited to, asking a question over Stack Overflow (stackoverflow.com), learning how to bake a cake by watching an instructional video uploaded on YouTube, creating topic discussions over chat groups (e.g. Internet Relay Chat), and answering questions on Massive Open Online Courses. The general availability of the Internet has enabled its users to acquire new knowledge or to enhance their existing knowledge at their own convenience.

However, caution must be exercised as not all information published on social media is curated, and over-reliance and frequent use of social media may lead to addiction.

6.5 Good practices and general etiquette

Social media can provide a wealth of information for Internet users. However, when using the Internet, users are inadvertently exposed to risks which can decrease their online privacy and online security. CyberSecurity Malaysia is a not-for-profit Company Limited by Guarantee that officially reports to the Ministry of Communications and Multimedia. Initially known as Malaysia Computer Emergency Response Team (MyCERT) in 1997, it was placed under the National ICT Security & Emergency Response Centre (NISER) in 2001, after which it was rebranded (as CyberSecurity Malaysia) and placed under the Ministry of Energy, Science, Technology, and Innovation (MOSTI) in 2007. However, in 2017, CyberSecurity Malaysia functions report directly to the National Cyber Security Agency (NASCA) while its industrial development, and research and development functions remained under the purview of MOSTI. CyberSecurity Malaysia reports directly to Ministry of Communications and Multimedia ("CyberSecurity Malaysia," n.d.). CyberSecurity Malaysia provides a range of cyber security services as follows:

1. Cyber security responsive services
2. Cyber security proactive services
3. Outreach and capacity building
4. Strategic study and engagement
5. Industrial research and development

To this end, CyberSecurity Malaysia has provided several principle guidelines on its website with regard to security best practices and security guidelines (some of which also covers general etiquette). These can be accessed at

http://www.cybersecurity.my/en/knowledge_banks/principles_guidelines/main/detail/2339/index.html.

CHAPTER 7: Using Library Resources

7.1 UMS Library

UMS Library plays an important role in helping to create a knowledgeable university community, involving students, academics and researchers. UMS Library is an information centre for users in the process of teaching, learning, doing innovative research, and producing university publications. In line with its vision of “Becoming a world-renowned centre of knowledge”, UMS Library is always striving to develop and improve its facilities and services from time to time to fulfil the needs of the University and to meet users’ satisfaction. The Library initiatives include improving collections and information resources, the quality of facilities, the effectiveness of service delivery and the level of accessibility to information.

There is a plethora of information relating to a multitude of fields which can be accessed electronically 24 hours a day and seven days a week via subscriptions databases that contain full-text journals and electronic books. Electronic access is possible anytime and anywhere through the Web OPAC and Library Website (URL:<http://webvirtua.ums.edu.my/>). UMS library is also constantly initiating and improving collaborations with other local libraries, as well as external libraries, based around the sharing of information and knowledge resources. The library also helps to provide reading materials and information not held in its collections, via the Interlibrary Loan service (ILL).

Through UMS library, users can use a shared database which grants access to the libraries of local universities, and which can be accessed online for the purpose of finding materials and information, such as Thesis Database (MYTO), Serial Item Master List (MyULIS), Internet Resources (MGIR) and also University Publications collection (MURC). Users can access such material through I-Portal Malaysian University Libraries & National Library Network (MyUniNet) at the URL <http://portal.perpun.net.my/portal/index.php>. Using the Library Information System (Virtua), searches for information can be done online through WebOPAC 24 hours, seven days a week. With this system, loans, renewal of loans and reservations can be made without having to queue at the counter.

The 24-Hour Book Drop can be used to return loaned books at any time, even outside the library opening hours. In addition, a 24-Hour Reading Room within the library building facilitates study at any time. Meanwhile, 500 thin client computers with Internet access and wireless facilities are available at the library to further learning and research. Other facilities, such as a prayer room are also available for library users. UMS library also extends its services via branches located at the Labuan International Campus, Sandakan Campus, the Faculty of Medicine and Health Sciences (main campus, clinical blocks at Kingfisher and Queen Elizabeth Hospital in Kota Kinabalu, Duchess of Kent Hospital in Sandakan and in Sikuati, Kudat). Furthermore, professional staff are always ready to assist and provide guidance to users who need advice. On-going guidance and training are also provided to ensure that users are able to take full advantage of all the facilities provided.

7.2 Vision

Towards a world-renowned centre of knowledge through the development of dynamic and innovative information.

7.3 Mission

To provide comprehensive resources and services to support university teaching, learning, research, innovation and publication.

7.4 Philosophy

To develop a knowledgeable, outstanding and progressive society founded on mastery and love of knowledge through the inculcation of positive reading habits and a lifelong learning culture.

7.5 Objectives

The following are UMS Library's objectives:

1. Developing quality resources and information.
2. Providing efficient, effective, accurate and user- friendly services.
3. Optimising utilisation of various kinds of information, facilities and services.
4. Cultivating a knowledge culture within the University and among the wider community.

7.6 Client Charter

UMS Library pledges to do the following:

1. Develop and enhance the depository of quality resources and information.
2. Provide efficient, effective and accurate information at all times.
3. Provide user- friendly services.
4. Provide a conducive learning environment.

7.7 Motto

The UMS Library motto is "To Serve with Quality".

7.8 Types of library resources at UMS Library

Figure 25 shows a pictograph informing users about the services, facilities and annual activities offered at UMS Library together with a list of branches.

UMS LIBRARY

UMS Library is An Information Centre for user in the process of Teaching, Learning, Research, Innovation and University Publications

Our Core Business

SERVICES

01

Collection

Printed

- General Collection
- Research Collection
- Serial Collection
- Reference Collection
- Multimedia Collection
- Archive Collection
- Aseana+3
- Nobel Laureate
- Perdana Collection
- American Corner Collection
- Children's Collection

Online

- Online Database** electronic resource platforms that provides online information : article reviews, research papers, journals, conference papers, proceedings, case files & etc.
- E-Journals** An electronic journal is a scholarly journal which is published periodically in electronic format
- E-Books** non-editable, reflowable books that has been converted to a digital format to be read on any digital device such as tablet, smartphone, computer & etc.
- UMS IR** UMS Institutional Repository is a digital intellectual archive that provide access, manages and collect publications by Universiti Malaysia Sabah staff and higher degree students.

Information Literacy

- WEBOPAC** online public access catalog
- Turn-it-in** tools to prevent plagiarism
- Citation Tools** example : Mendeley
- Website** is a collection of related information

Memberships

- Internal** Student, Academic & Non-academic staff
- External** including Alumni, non alumni, corporate, government officers etc.

Document Delivery Service

- Inter - Library Loan
- Document Delivery Services (DDS)

FACILITIES

02

- Auditorium
- Screening Room
- Training Room
- Discussion Room
- 24 Hour Room
- Cubicles
- Muslim Prayer Room
- Locker
- Printing / Fotocopy
- Computer Labotary
- Wifi





BRANCHES

03

- Labuan International Branch
- Medical Library
- Sandakan Campus
- Off Campus (Tawau)
- Mini Library FKJ





ANNUAL ACTIVITIES

04

- Cintai Ilmu** A knowledge society generates program
- Jom Baca** aims to gain reading habit
- CSR** Corporate social responsibility




aksara media | UMS Library ©2019

Figure 25: Services , facilities and annual activities offered at UMS Library, together with a list of branches

7.9 Accessing UMS institutional repository

UMS Institutional Repository (IR) is a digital intellectual archive that collects, manages and provides access to publications by UMS staff and higher degree students. One of the objectives of UMS IR is to enhance the visibility of authors and researchers as well as that of UMS as an academic institution. The following are the types of documents held by UMS IR:

1. Academic Exercises
2. Annual Reports
3. Articles
4. Books
5. Book Chapters
6. Conference Papers
7. Newspaper Cuttings
8. Speeches
9. Theses
10. UMS News
11. Research Reports

UMS IR can be accessed through <http://eprints.ums.edu.my>. Figure 26 shows the front page of the UMS IR website:

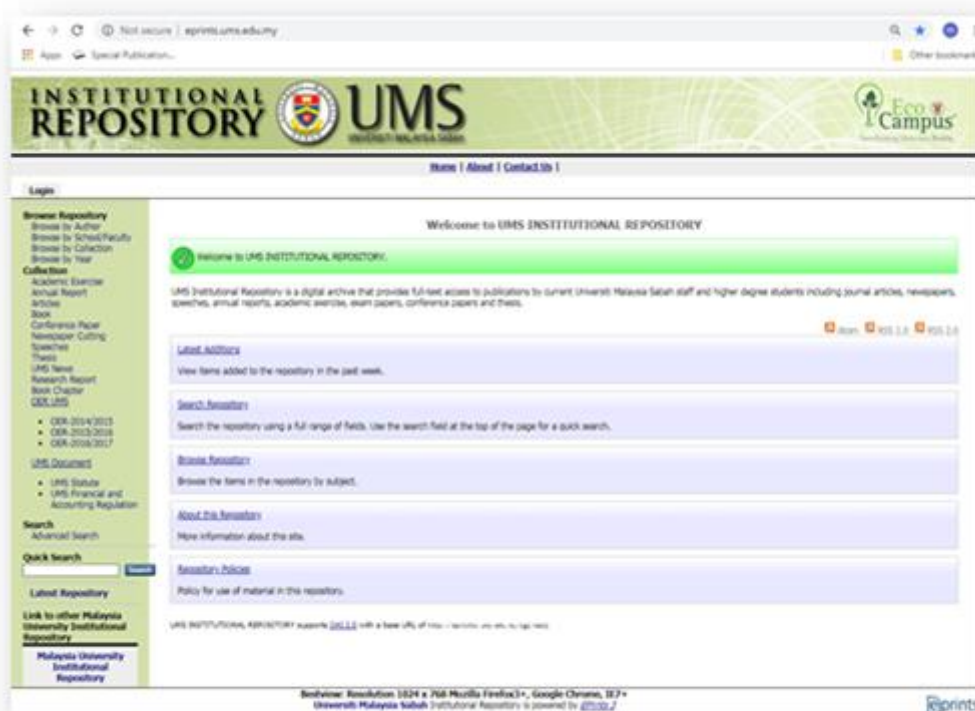


Figure 26: Front page of the UMS IR website

7.10 Library website

Figure 27 shows a pictograph informing users about the online platform and social media tools utilised by UMS Library:



Figure 27: Online platform and social media tools utilised by UMS Library

7.11 Library WebOPAC

Figure 28 shows a pictograph introducing users to WebOPAC.

UMS LIBRARY ONLINE PUBLIC ACCESS CATALOGUE

WEBOPAC LIBRARY SYSTEM

<http://webvirtua.ums.edu.my>

ADVANTAGES

- WEB-BASE**
accessible over the Internet to users all over the world
- SEARCHING FEATURES**
Full search capability on conventional access Keyword points (Title, Author, Publisher, Subject, Class number (or call number) and ISBN/ISSN)
- HYPertext LINKS**
Hypertext links in full bibliographic record display. (a) Authors (b) Subject (c) Call number (d) Series (e) Location
- QUICK UPDATED**
The status of any book may be know as book issue or not etc. The status of an acquisition order may be available at both staff and public terminals located throughout the library
- NO LIMITATION**
There is no limitation of time and space for searches of any document of not only his/her library but also any networked library

AKSARA MEDIA | UMS LIBRARY | 2019

Figure 28: Introduction to WebOPAC

7.12 Turnitin

Plagiarism is a form of fraud (“What is Plagiarism? - Plagiarism.org,” n.d.) which is heavily frowned upon in the academic world. There are tools (commercial or otherwise) that are able to identify plagiarised sections in a given item of literature, though there are cases where plagiarism is inadvertently committed due to similarities in writing styles. UMS has an active subscription to Turnitin, which can be accessed by students via their lecturers or supervisors. The percentage of similarity (based on Turnitin’s report) should not exceed 30 % as outlined in the UMS Thesis Writing Guide 2018 (Pusat Pengajian Pascasiswasah Universiti Malaysia Sabah, 2018). Figure 29 shows a pictograph introducing users to Turnitin.

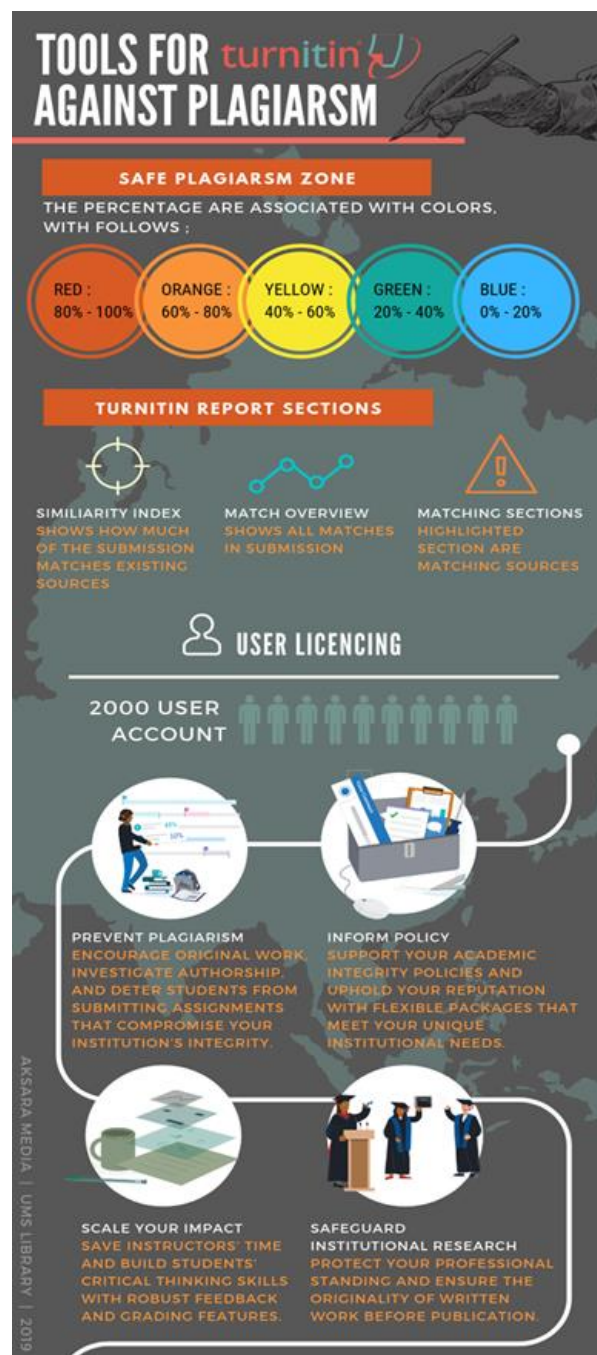


Figure 29: Introduction to Turnitin

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