The Government of the Republic of the Union of Myanmar

Ministry of Education

Year 2 Semester 2

EDU2209
Curriculum and Pedagogy Studies: Information and Communication Technology

Student Teacher Textbook

PREFACE

The Myanmar Ministry of Education developed the four-year Education Degree College Curriculum, in line with the pre-service teacher education reform as specified in the National Education Strategic Plan (NESP) 2016-2021.

The Myanmar Education Degree College Curriculum consists of several components: the curriculum framework, syllabi, Student Teacher Textbooks, and Teacher Educator Guides. This curriculum for the four-year Education Degree College was designed and structured to align with the Basic Education Curriculum and to equip student teachers with the competencies needed to teach effectively in Myanmar's primary and middle school classrooms. It is based on a Teacher Competency Standards Framework (TCSF) which articulates the expectations for what a teacher should know and be able to do in the classroom.

The curriculum follows a spiral curriculum approach which means that throughout the four years, student teachers return to familiar concepts, each time deepening their knowledge and understanding. To achieve this, the four-year Education Degree College programme is divided into two cycles. The first cycle (Years 1 and 2) is repeated at a deeper level in the second cycle (Years 3 and 4) to enable student teachers to return to ideas, experiment with them, and share with their peers a wider range of practices in the classroom, with the option to follow up on specific aspects of their teaching at a deeper level.

The curriculum structure provides an integrated approach where teaching of subject knowledge and understanding educational theories are learnt through a supportive learning process of relevant preparation and practical application and experience. The focus is, therefore, not just on subject content, but also on the skills and attitudes needed to effectively apply their knowledge, skills, and attitudes in teaching and learning situations, with specific age groups. As the focus is on all components of a 'competency' – knowledge, skills, attitudes and their effective application – it is referred to as a competency-based curriculum.

Accordingly, a competency-based curriculum is learner-centred and adaptive to the changing needs of students, teachers, and society. Where new concepts are learnt, they are then applied and reflected on:

1. Learn (plan what and how to teach);
2. Apply (practise teaching and learning behaviours); and
3. Reflect (evaluate teaching practice).

Beyond the Education Degree College coursework, it is intended that student teacher graduates will be able to take and apply this cycle of 'learn, apply, and reflect' to their own teaching to effectively facilitate the learning and development of Myanmar's next generation.

The Myanmar Education Degree College Curriculum was developed by a curriculum core team, which is a Ministry of Education-appointed team of Myanmar Education Degree College teacher educators supported by the Ministry of Education, resource persons from the Universities of Education, University for the Development of National Races of the Union and a team of national and international experts. Overall guidance of the work was provided by the Department of Higher Education, Ministry of Education.

The curriculum development was also supported by the Strengthening Pre-service Teacher Education in Myanmar project, with technical assistance from the United Nations Educational, Scientific and Cultural Organization (UNESCO) and financial contributions from Australia, Finland, and UK Governments.

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HOW TO USE THIS TEXTBOOK

Who will use this ICT Student Teacher Textbook?

This textbook has been designed to guide you, as a student teacher, through Year 2 of the ICT subject. In this textbook, you will find foundational information about ICT. The textbook also includes learning activities and additional resources to help you develop the knowledge, skills, and attitudes you need to be an effective teacher in Myanmar. You will use the textbook as a key resource in class; you can also use the textbook for independent self-study.

While the content in the textbook is addressed to you, as a student teacher, it is also a resource for your teacher educators, who will serve as your facilitators and mentors as you develop key competencies in ICT. Throughout this subject, you and your teacher educator will work together, using this textbook as a tool for learning.

When and where does Year 2 ICT take place?

A total of 22 teaching periods (Semester 1: 12 teaching periods; Semester 2: 10 teaching periods) are allotted for Year 2 ICT of the four-year Education Degree College programme. Classes will be held on the Education Degree College campus.

What is included in the Year 2 ICT Student Teacher Textbook?

The organisation and content of ICT Student Teacher Textbook align with ICT subject syllabus of the four-year Education Degree College programme.

Year 2 ICT contains the following topics:

- Introduction to ICT
- Basic ICT Concepts
- Computer Application
- Media and Information Literacy and Digital Citizenship
- Internet and Communication
- ICT in Education

For each unit, you will be working through learning activities, both individually and with your peers as well as teacher educators, to deepen your knowledge, skills, and attitudes on the topic. The content map below highlights the expected learning outcomes and time allocations for each unit in this textbook.

Table A. Year 2, Semester 2, ICT content map

Units	Sub-units	Lessons	Learning Outcomes	TCSF		Periods
				Minimum Requirements	Indicators	
4. Media and Information Literacy and Digital Citizenship	4.2. Digital Citizenship	4.2.1. Digital citizens in social media	• Identify the difference between the Internet and social media • Define the concept of digital identity • Practise social media etiquette • Explain how to protect "digital identity" and personal information online	A2.2 B1.2 C3.3 D3.1	A2.2.3 B1.2.1 B1.2.2 C3.3.1 D3.1.2	1
		4.2.2. Digital resilience	• Identify and distinguish different information disorders: disinformation, mal-information, misinformation and hate speech • Explain how algorithm works and discuss its impact on information processing, including the creation of echo chambers	A2.2 B1.2 C3.3 D3.1	A2.2.3 B1.2.1 B1.2.2 C3.3.1 D3.1.2	1

Units	Sub-units	Lessons	Learning Outcomes	TCSF		Periods
				Minimum Requirements	Indicators	
5. Internet and Communication	5.1. Anatomy of the Web	5.1.1. Strategy of using search engine	• Search effectively with a specific and focused search strategy, using accurate search terms etc. • Use synonymous terms and broaden search when necessary • Differentiate between Ads and search results • Demonstrate an understanding of search engine optimisation (SEO)	A2.2 B1.2 D2.1	A2.2.1 A2.2.3 B1.2.1 B1.2.2 B1.2.3 D2.1.2	1
		5.1.2. Engaging online video tutorials	• Use online video tutorials to facilitate thinking and problem solving • Explain "MOOCs" and introduce several famous MOOCs	A2.2 B1.2 D2.1	A2.2.1 A2.2.3 B1.2.1 B1.2.2 B1.2.3 D2.1.3	1
	5.2. Synchronous Conferencing	5.2.1. Understanding synchronous conferencing tools	• Explain the types and methods of conferencing • Implement conferencing tools in an education setting	A2.2 B1.2 D2.1	A2.2.1 A2.2.3 B1.2.1 B1.2.2 D2.1.1 D2.1.3	1
		5.2.2. Synchronous conferencing tools	• Explain how to initiate a synchronous group chat, audio call and video call • Demonstrate videoconferencing using apps, laptop/ desktop software • Demonstrate an effective and engaging activity using synchronous conferencing	A2.2 B1.2 D2.1	A2.2.1 A2.2.2 A2.2.3 B1.2.1 B1.2.2 D2.1.1 D2.1.3	1

Units	Sub-units	Lessons	Learning Outcomes	TCSF		Periods
				Minimum Requirements	Indicators	
6. ICT in Education	6.1. ICT for Teacher Collaboration	6.1.1. Using ICT in teaching preparation and collaboration	• Explain the value of collaboration among teachers using ICT • Use relevant ICT tools to collaborate among teachers • Demonstrate how to exchange lesson plans, best practices, lessons learnt, and resource constraints	A2.2 B1.2 D2.1 D3.1	A2.2.2 B1.2.2 D2.1.1 D2.1.2 D2.1.3 D3.1.2	1
	6.2. ICT in Active Teaching and Learning	6.2.1. Using ICT in a learner-centred classroom	• Establish active teaching and learning facilitated by use of ICT	A2.2 B1.2 D2.1	A2.2.2 B1.2.2 D2.1.1 D2.1.2 D2.1.3	1
	6.3. ICT in Assessment	6.3.1. Offline assessment	• Explain the difference between offline and online assessment systems • Describe effective offline assessment tools in education by demonstrating any ICT tools • Assess offline assessment tools in education	A2.2 B1.2 D2.1 D3.1	A2.2.1 A2.2.2 B1.2.2 D2.1.2 D3.1.2	1
		6.3.2. Online assessment	• Practise the different types of online assessment • Identify many online assessment tools to teachers, including several multiple-choice education learning platforms (e.g. Google Word Coach) • Create sample online tests	A2.2 B1.2 D2.1	A2.2.1 A2.2.2 B1.2.2 D2.1.2	1
Total number of periods						**10**

The purpose of this course is to provide student teachers with basic knowledge of ICT-related concepts and using ICT in education and to prepare them to teach ICT in primary and middle schools. While the course includes practical sessions on how to use computer applications, a number of strands provides student teachers knowledge on basic ICT, media and information literacy, digital citizenship, and Internet and communication. The course will also provide student teachers with an understanding of the linkages of ICT with other subjects' learning areas and how ICT can be effectively used in education. In addition, this ICT subject also supports the development of ICT knowledge for student teachers themselves. The knowledge will be useful for preparing them to utilise ICT effectively in not only teaching but also other areas such as management and professional development.

For all the student teachers, there will be 50 minutes per week in each year to study ICT. Years 1 and 2 are foundation years, in which student teachers are provided with foundational skills on basic knowledge of ICT and using ICT in education. Years 3 and 4 are years for deeper learning, in which student teachers are provided with advanced understanding and application on ICT and using ICT in education and learning.

Learning outcomes of the ICT subject for student teachers:

- To construct a better understanding of the alignment of ICT subject to the basic education curriculum framework and learning resources, and apply this to ensure the continuity and the progression of students' competencies developed across the grade level; and
- To apply the competencies, particularly the technical skills, gained around ICT in their teaching practice to effectively support their students' learning process to achieve the learning objectives set for each ICT strand.

The content of this textbook is based on the Myanmar Teacher Competency Standards Framework (TCSF) which articulates the expectations for what you should know and be able to do in the classroom. The teacher competencies in focus for the ICT subject include:

Table B. Teacher competencies in focus: Year 2 ICT

Competency standard	Minimum requirements	Indicators
A2: Know appropriate use of educational technologies	A2.2 Demonstrate understanding of appropriate use of Information and Communication Technology (ICT) in teaching and learning	A2.2.1 Describe the function and purpose of online and offline educational tools and materials to support the teaching and learning process A2.2.2 Evaluate and match available online and offline ICT tools and materials to curriculum content and pedagogical strategies, including online and offline A2.2.3 Describe and demonstrate the understanding of basic concepts and principles of media and information literacy
A3: Know how to communicate well with students and their families	A3.2 Demonstrate respect for the social, linguistic, and cultural diversity of the students and their communities	A3.2.1 Give examples of inclusive communication to support all students' participation and engagement in classroom activities A3.2.2 Be aware of social, linguistic and cultural background of parents, community elders and leaders when interacting with them
B1: Teach curriculum content using various teaching strategies	B1.2 Demonstrate capacity to apply educational technologies and different strategies for teaching and learning	B1.2.1 Use teaching methods and learning strategies appropriate for the class – culture, size and type B1.2.2 Use knowledge of different literacy teaching strategies to support development of subject matter literacy B1.2.3 Create opportunities for students to investigate subject-related content and concepts through practical activities
C1: Service to profession	C1.4 Demonstrate responsibility and accountability for the use of education resources	C1.4.1 Use school supplies and resources appropriately
C3: Promote quality and equity in education for all students	C3.3 Demonstrate capacity to build students' understanding of different cultures and global citizenship	C3.3.1 Integrate concepts of sustainability, equality, justice and the rights and responsibilities of students into class and school activities
D2: Engage with colleagues in improving teaching practice	D2.1 Improve own teaching practice through learning from other teachers and professional development opportunities	D2.1.1 Discuss teaching practices with supervisors and colleagues, and willingly seek constructive feedback D2.1.2 Participate in professional development activities related to identified goals for improving practice D2.1.3 Establish goals for own professional development as a teacher

Competency standard	Minimum requirements	Indicators
D3: Participate in professional learning to improve teaching practice	D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice	D3.1.1 Identify relevant professional learning material to improve own practice D3.1.2 Search and analyse online or offline information on current trends and research based practices in lower secondary education and for specific subjects taught to improve one's own content knowledge and teaching practice

Source: Myanmar Teacher Competency Standards Framework (TCSF) - Beginning Teachers, 2020, pp. 109 – 140

How do I use this textbook?

You can use this textbook both for your own self-study and as an in-class resource for learning activities facilitated by your teacher educator. Each unit in the textbook includes:

Expected learning outcomes: These are listed at the beginning of each unit and at the beginning of each lesson. The expected learning outcomes indicate what you should know and be able to do by the end of the lesson or unit.

Competencies gained: This list of the selected Teacher Competency Standards Framework (TCSF) competencies are what you should know and be able to do by the end of the lesson or unit as a beginning teacher.

Learning content: The learning content for each unit is broken down into sub-units and lessons that cover subject content knowledge that is important for teachers to know.

Learning activities: The learning activities included in the textbook are individual activities that you can do to help reinforce and deepen your knowledge and understanding of a topic. Your teacher educator will also facilitate learning activities during class. These may be individual, partner, small group, or whole class activities designed to help you achieve the learning outcomes for each lesson.

Review questions: You can use the unit review questions to test your own understanding of the unit content, or to help you study for an exam.

Key messages: At the end of the unit, under Unit Summary, there is a brief summary of the main points of the unit to help you review and remember the most important information.

Unit reflection: Taking the time to deliberately think about, or reflect, on what you have learnt will help you remember and apply that learning, and make connections with other subject areas and real-life. Each unit ends with some suggestions on how you can reflect and follow-up on what you have learnt in the unit.

Further reading: Each unit lists suggestions of additional resources on the topic. You can look these up in the library, on the internet, or in your Education Degree College's e-library to learn more about the topic.

Key terms: Important words or concepts from the Unit that are highlighted in the beginning of each Unit.

At the end of this textbook, you will find a **Glossary** with the definitions of these key words found throughout the textbook that might be new to you. These words are listed in alphabetical order. You will also find a list of all the **Bibliography**, which are the original sources of information used throughout the textbook.

Remember, your teacher educator is there to help facilitate your learning in this module. If there is material you do not understand in the textbook, be sure to ask your teacher educator, or your classmates, for help. As a student teacher, you are part of a community of collaborative learning within your Education Degree College as you work – together with your peers and guided by your teacher educators – to earn your teaching qualification.

Unit 4

Media and Information Literacy and Digital Citizenship

We access, read, connect and interact with new information every day. This unit is intended to identify some of the risks associated with digitisation and to develop your media and information literacy skills. You will analyse how media ownership impacts reporting processes and content. You will look critically at traditional and modern media. You will build skills which enable you to protect your digital identity and personal information online. You will also identify and distinguish between information disorders, as well as learn more about how algorithms work and their impact on information processing.

Expected learning outcomes

By the end of this unit, you will be able to:

- Discuss how media selects, edits and alters information based on the objectives and functions of the media;
- Identify common media representation, including stereotypes of and prejudices against specific groups, communities and sectors (e.g. religion, gender, ethnicity, political ideology);
- Evaluate media content and information sources;
- Discuss how media ownership (e.g. private, government and public service) impacts on journalism processes (e.g. news sourcing and writing) and content (e.g. news stories);
- Recognise the importance of journalism ethics and practice editorial independence;
- Describe the importance of advertisements in media and information platforms;
- Evaluate media content critically using such criteria as accuracy, sensitivity (e.g. culture and religion) and timeliness;

- Identify the difference between the Internet and social media;
- Define the concept of digital identity;
- Practise social media etiquette;
- Explain how to protect "digital identity" and personal information online;
- Identify and distinguish different information disorders: disinformation, mal-information, misinformation and hate speech; and
- Explain how algorithm works and discuss its impact on information processing, including the creation of echo chambers.

Competencies gained

A2.2 Demonstrate understanding of appropriate use of Information and Communication Technology (ICT) in teaching and learning

B1.2 Demonstrate capacity to apply educational technologies and different strategies for teaching and learning

C3.3 Demonstrate capacity to build students' understanding of different cultures and global citizenship

D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Key terms

Digital citizen, digital footprint, digital identity, digital resilience, echo chamber, Facebook, information literacy, mal-information, misinformation, new media, perspectives, prejudice, privacy, security, social media, stereotypes, TAN, traditional media

4.2. Digital Citizenship

Studying this sub-unit will teach you how to identify the difference between the Internet and social media, define the concept of **digital identity**, how to practise good social media etiquette and how to protect your digital identity and personal information online. You will identify and distinguish among different information disorders, explain how algorithms work and their impact on information processing, including the creation of echo chambers.

4.2.1. Digital citizens in social media

Expected learning outcomes

By the end of this lesson, you will be able to:

- Identify the difference between the Internet and social media;
- Define the concept of digital identity;
- Practise social media etiquette; and
- Explain how to protect "digital identity" and personal information online.

Myanmar is fast becoming a digital country. However, there are risks to rapid digitisation. Myanmar people are being exposed to a wide variety of content online that is no longer strictly maintained by a limited number of organisations, or **"traditional media"**. Traditional media consists of pre-social media organisations such as TV, radio and print media companies. These companies had control over generation and distribution of content and served as "gatekeepers" for what kinds of content was published widely for people to read.

The rise of the internet, and particularly social media companies, has democratised the publishing of content. This means anybody with a smartphone, laptop, desktop, or other computer device and an internet connection can publish information

to Myanmar and the entire world. In one sense, democratisation of media is wonderful: now a much wider range of people's opinions, thoughts and ideas can be heard by all. On the other hand, Myanmar has been at the forefront of concerns about the misuse of social media, particularly on **Facebook**, to foment hatred and violence. Therefore, it is important to use social media responsibly; to be a good **digital citizen**.

The difference between the Internet and social media

Many Myanmar people think that social media *is* the Internet. However, social media is not the Internet, but rather apps that you can use with a data connection. Remember in Sub-unit 5.1 of the Year 1 ICT curriculum you learnt about the Internet. In that unit, you learnt that, "the Internet is the most well-known and the largest network linking hundreds of thousands of individual smaller networks all over the world. The Internet has a range of capabilities that organisations are using to exchange information internally or to communicate externally with other organisations. The Internet began as a U.S. Department of Defense network to link scientists and university professors around the world."

You learnt what a Wide Area Network (WAN) is and that "…conventionally, the most common WAN has been one in which a host computer is connected to terminals in remote locations. Recently, however, there has been an increase in systems in which a number of LANs connected to WAN to form a large network. And the Internet may be considered a WAN."

When you are using a social media app on your mobile phone or laptop computer, you are not using the Internet itself, but rather you are accessing a social media company's server using the telco data connection on your device. When you are loading a social media company's app page, for example, the social media app you are using requests data from the social media company's servers about your friends and from paid advertisers based on your personal preferences that the social media company collects. This is based on what social media content you click on and interact with, specifically by your "Likes" for a given social media content post, page, or message. The social media company then has applications running on its servers that send you data in the form of data packets that appear in your social media app as posts, messages, pages and other content.

In sum, social media is *not* the Internet. Rather, you are using the internet to send, request and receive data from social media companies' servers using their apps on your phone.

Digital identity

Digital identity is a means of identifying or authenticating the identity of an individual both online and offline.[1] Said another way, digital identity is "an amalgamation of any and all attributes and information available online that can bind a persona to a physical person."[2] A digital identity may be created from information taken from a valid government-issued identification (ID) and be used to accurately identify an individual in order to provide them with rights or entitlements. A digital identity can also be created to provide an individual with access to digitised commercial and public services, such as e-commerce, e-government and digital payments. A digital identity can be formed, sometimes unintentionally, when an individual engages in digital economy through information gathered from the various types of data he or she uses, such as phone data, search history data and particularly for the Myanmar context, social media data. The collection of these data information can then be used to identify and profile an individual.

A helpful video on digital identity can be viewed here:

Stefan Brands (2007), 'An Introduction to Digital Identity' https://www.youtube.com/watch?v=uNGcKhqGMCw

Protection of digital identity and personal information

There are many reasons why you would want to protect your digital identity online. There are challenges, risks and threats of internet use, especially in the use of social media in the Myanmar context. Some challenges and risks related to online content are given below.

1 UNECA. (2020). What is digital identity, digital trade and digital economy for Africa? Retrieved from https://www.uneca.org/dite-africa/what-digital-identity-digital-trade-and-digital-economy-africa

2 Turgeman, A. (2018). Demystifying digital identity: What it is, what it isn't and what it can be. *Forbes*. Retrieved from https://www.forbes.com/sites/forbestechcouncil/2018/11/15/demystifying-digital-identity-what-it-is-what-it-isnt-and-what-it-can-be/#5161fd312af1

Privacy

Privacy is defined as someone's right to keep their personal matters and relationships secret. Once your information is published online, content can spread rapidly nationwide, even around the world and remain online indefinitely. Many users, especially children, are unaware of the long-term consequences of publishing texts and pictures they may not want to make publicly available later on in their lives. User data stored on servers may be easily accessible, depending on the **security** features of the server and who might be targeting the server and people may not be aware how unprotected their personal data may be. Note that different information is appropriate for different contexts. For example, posting a personal photo of yourself with family or friends on a job website may not be a good idea when seeking a new job. A more professional photo of you in formal dress is more often the preferred photo for this situation.

Identity theft

When someone uses your personal information, including but not limited to your usernames and passwords, as well as other personally identifying information, with the intent to commit commercial or other fraud and to benefit from it, it is called identity theft. In Myanmar, this is particularly a serious issue as most people use very weak passwords such as "abc", "123" and "abc123", and often share their personal login information freely with acquaintances.

Money theft or phishing

Phishing refers to the process of taking bank or mobile money details, such as the personal identification numbers (PINs) and transaction authentication numbers (**TANs**) with the intent to steal money from other people's bank or mobile money accounts. Use of fake websites or impersonating friends in chat apps or emails are common tactics employed to conduct phishing attacks.

Disclosing personal information

When setting up a profile on a social media platform, users are often asked to disclose personal information to present themselves to the rest of the social media community. Such disclosure can also be asked for in chat apps. Users often disclose their names, phone numbers and addresses.

Profiling

As people create multiple personal profiles on multiple software platforms, there is a risk that personal data published on one platform will be merged with data published on other platforms or given away elsewhere.

Note that these "risks" may not be risks so long as the user consents to use of their data in this way and is aware of the potential misuse of their data. Unfortunately, many users are unaware of how their data is collected and used. There are several steps you can take to protect your digital identity and protect your personal information online. These are given below.

Safeguard your NRC ID

National Register Citizens (NRC) ID is your proof of citizenship. In most cases, you do not need to share your NRC ID online, especially not on social media or in chat apps. Typically, you would only share your NRC ID for something important, such as applying for a loan, opening a mobile bank account, registering a SIM card, or entering into a rental agreement.

Update your software regularly

In Myanmar, most app users, whether on mobile phone or laptop or desktop, do not update their software regularly. Most software updates feature security patches and bug fixes, closing up vulnerabilities that would allow hackers access to your data.

Use end-to-end encrypted chat apps

Viber features end-to-end encryption, where all your chats are not viewable by unauthorised parties. Messenger does not feature end-to-end encryption by default; you *can* turn on end-to-end encrypted messaging but only by turning on the feature before you start your chat conversation.[3] In Messenger, these conversations are called "Secret Conversations". Here are instructions for setting up a secret conversation in Android:

- From Chats, tap in the top right.

3 Facebook Messenger. Retrieved from https://www.facebook.com/help/messenger-app/1084673321594605

- Tap in the top right.
- Select who you want to message.
- If you want, tap in the text box and set a timer to make the messages disappear.

Use a password manager

A password manager is a tool that does the work of creating, remembering and filling in passwords and auto-generates very secure passwords for your logins. Many people use the same, simple, easy-to-guess password for most or all of their logins. The UK's National Cyber Security Centre (NCSC) found that 23 million people used "123456" as their password.[4] Other passwords in the top five included "password" and "1111111". You can see how quickly a computer will be able to crack your password on certain websites, as shown in the table below.

Password managers can generate very complex passwords that will take hackers thousands or millions of years to crack. They can store these passwords securely, so you do not have to memorise them. And you can readily access these passwords when you need to login to a particular website or app.

Popular and reliable password managers include LastPass, Dashlane, Keeper and 1Password. It may be that your password or email address has already been compromised. You can check for yourself if this is the case, by using the table below:

Table 4.6. Online security

Check for yourself...		
What?	**URL**	**QR code**
How secure is your password?	https://howsecureismypassword.net/	

4 BBC. (2019). Millions using 123456 as password, security study finds. Retrieved from https://www.bbc.com/news/technology-47974583

Check for yourself...		
What?	**URL**	**QR code**
If your password has been compromised	https://haveibeenpwned.com/Passwords	
If your email address has been compromised	https://haveibeenpwned.com/	

Think before downloading or using new apps

This is especially relevant for Chinese phones that use outdated versions of Android and do not support Google Play, downloading unknown mobile apps could be introducing malware into your phone that could access the personal data on your phone.

Check your privacy settings

Most Myanmar people have their profile settings set to "Public", which is the lowest privacy setting. As an example, see here how to edit your privacy settings on most social media platforms:

- Navigate to your privacy settings on the social media platform, e.g. by going to the link provided in Table 4.7. The privacy settings are usually in the "Settings" or "Privacy" option in the platform's menu.
- Edit to your preferences whom you want to see your posts, limit the audience who can access your past posts and who gets to see personal information that you have shared with the social media platform.

Note that privacy settings are not only limited to social media platforms, but are typically available in any software programme that transmits data over the internet. If you are using software that does not have a privacy setting, reconsider using that software, as your personal information may be shared to third parties without your prior consent.

Table 4.7. Privacy settings

URL	QR code
https://www.facebook.com/settings?tab=privacy	

Practise social media etiquette

Part of being a digital citizen is having the skills and knowledge to use digital technologies confidently so they can understand what they see online, engage positively and communicate with others. A good video introduction on digital citizenship can be viewed here: https://www.youtube.com/watch?v=f4B0q2oOLbs

Understanding media and **information literacy** is important because this will enable student teachers and students to understand content online, as well as how to conduct themselves in a responsible manner online. The most important aspect of media and information literacy is critical thinking – this is the best way to help one's community.

Figure 4.10. Becoming a critical thinker

To be a good critical thinker, one must first engage in the following activities:

- Reflect about digital self. This involves considering your "digital footprint", or what content you generate and leave online.
- Connect with others responsibly. How to be a productive "digital citizen" to help your community.
- Thinking critically online. How being a "critical thinker" can help both you and your community online.

It is important to think about what it means to communicate online: what it means to be part of the online community, all the benefits and privileges that bring and also the responsibilities we have to make that community safe, happy and strong.

Consider citizenship offline: Citizenship means being a member of a country with institutions such as government, the press and the law. Citizenship involves having rights, such as those found in the Myanmar constitution. Citizenship also involves having responsibilities, such as paying taxes, following traffic laws and following the criminal laws and penal codes.

Digital citizenship may not have these traditional institutions, but all the same, there are rights, responsibilities and institutions when acting as a person online, though it may be easier to forget.

Figure 4.11. Digital citizenship skills

A digital citizen has the skills and knowledge to use digital technologies confidently, so they can understand what they see online, engage positively, communicate with others and create their own digital content. As a digital citizen, you should be able to:

- access;
- understand;
- communicate respectfully;
- buy and sell;
- stay healthy;
- stay secure;
- recognise rights and responsibilities; and
- obey rules.

And you should do this with an understanding of your digital rights and responsibilities, while obeying the rules that govern what you are doing online. What digital citizenship ultimately means is: enjoy and appreciate the benefits of being online, be conscious of what you are doing and how you are behaving and treat everyone else with the respect you expect. A big part of this is knowing how to interact positively with others in the digital world — whether you are chatting with friends via instant messaging, sharing some news on social media, posting a photo, creating a video, writing a blog, gaming, shopping, working, or studying.

Learning activity 1. Active learning: What is digital identity?

Split up into groups or pairs and discuss what you think digital identity is and what it means for you online. Write down a list of your responses and share as a group by writing on chalkboard/whiteboard.

What is digital identity? We will start with an exercise with a sample person, Khin Khin:

Here is some basic information about Khin Khin:

- She is 19 years old and is studying to be a nurse.
- She is from Pathein and she loves karaoke (KTV).
- She was raised by her parents and has one sibling, Ko Kyaw. Ko Kyaw and Khin Khin are very close since he is only two years younger than she is.
- Ko Kyaw in his free time loves watching movies.

What do we know about Khin Khin?

- 19 years old
- Nurse
- Pathein hometown
- Karaoke (KTV)
- Myanmar
- Female
- Potentially middle class

In groups, discuss how this would translate into a digital identity. An important talking point is what parts of Khin Khin's identity (her personal information) does she want to share online?

Make two columns on a piece of paper and try to come to agreement on which parts she might want to share and which parts she might not want to share online.

Figure 4.12. Safety online

Learning activity 2. Active learning: Importance of keeping digital identity safe

Do you feel comfortable sharing all your information with everyone? Or would you ideally share some information with your friends, slightly different information with

your family and different again with your colleagues or fellow student teachers. Take a piece of paper and draw five columns. Put a heading at the top of the first three columns like this:

Table 4.8. Sharing online information

With friends	With family	With colleagues		

In each of these three columns, write what information you are comfortable sharing with these groups of people.

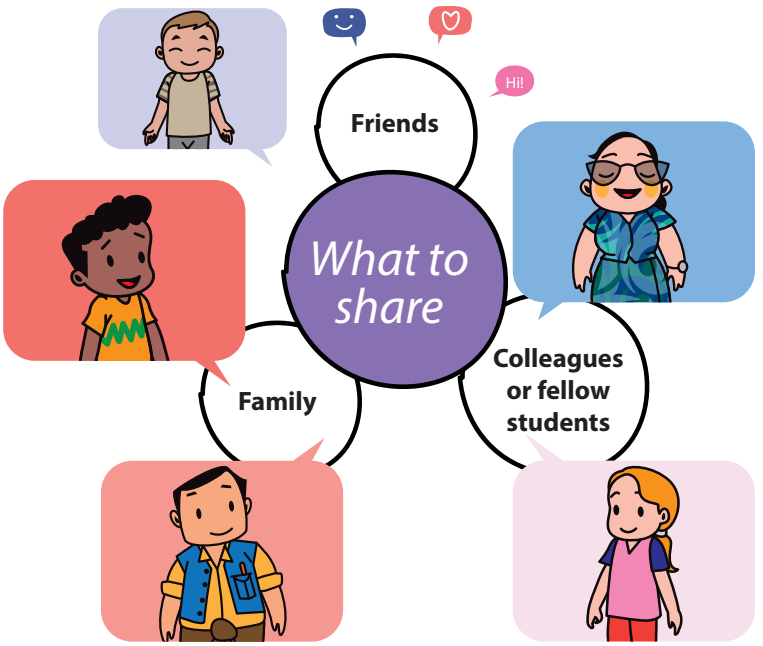

Figure 4.13. Sharing online information

Now, think about what you feel comfortable sharing with all the people in Myanmar, or even all the people in the world. At the top of the fourth column, write down Myanmar and note the kinds of information you would happily share with local people. In the final fifth column, write down the world and note the information you would share with an international audience.

Figure 4.14. Online tracks

When you leave information online, it is there for as long as it is kept on the company's servers of the app you are using. This could be almost forever. In your groups, discuss whether you are comfortable with your data being kept online by other companies for a long time. Document the pros and cons of leaving your personal information for others to see and use.

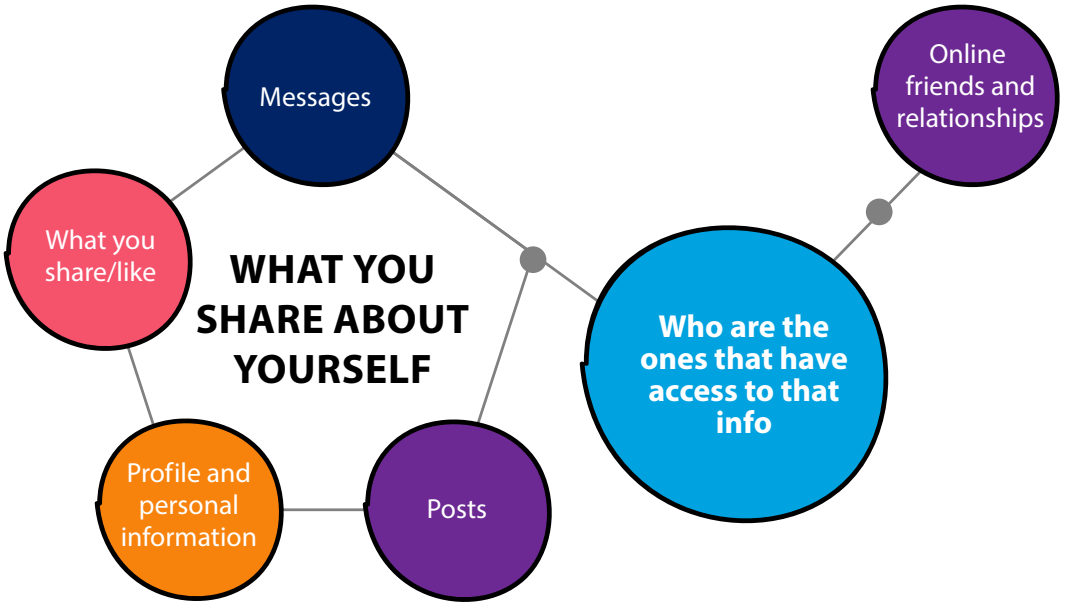

Figure 4.15. Sharing online information

After concluding the previous discussion, discuss amongst yourselves what kinds of information people share online in their profiles, posts and messages. Write down what various people share.

Figure 4.16. Accessing personal information

Finally, discuss how they find out information about people they do not know by using social media profiles as well as other software that uses the internet, such as search engines.

Learning activity 3. Active learning: What to be aware of online?

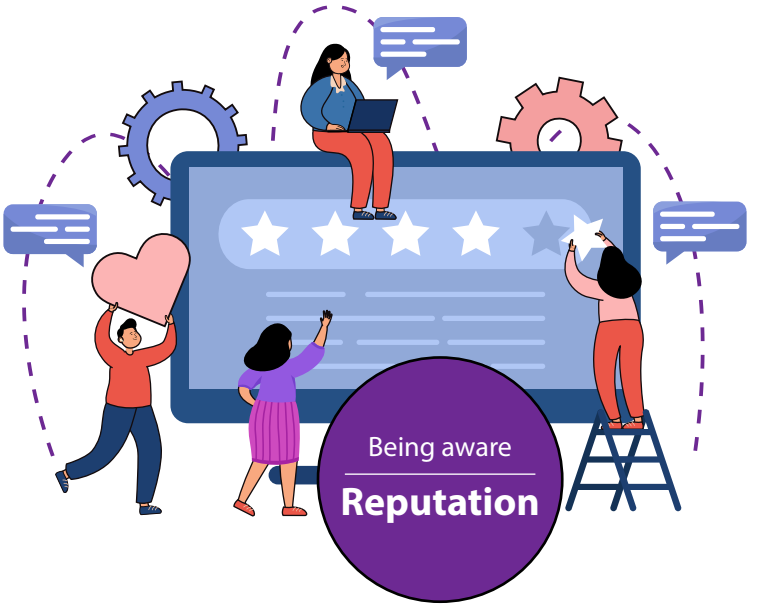

Figure 4.17. Your reputation

The kind of information you share online can have impacts on your reputation, or how others perceive and think about you. Imagine if someone was spreading false information about you on social media, or posting fake images of you engaged in activities you have not engaged in. How would you feel?

Figure 4.18. Online money theft

Others can also steal your digital identity if they get access to your personal information.

1. Why would someone want to steal your digital identity?
2. What kind of information do you think is useful for a digital identity thief?

Take five minutes in your group to note down the answers to these two questions.

Figure 4.19. Identity theft

Strangers may also try to pretend to be your friend or contact you online in order to get your personal information. Be very careful about sharing such information with strangers.

Figure 4.20. Being aware online

Have strangers ever messaged or called you? If so, what did you do about it? Strangers try to contact people all over the world in order to steal their money or data or otherwise harass them. There is a famous scam involving strangers calling people to get them to pay for thousands of dollars of Apple Store gift cards by using high pressure tactics such as pretending that the victim is in trouble with the government

or authorities or is under threat of violence.[5] In such a situation, it is good to apply the critical thinking skills you learnt to evaluate sources. In your group, discuss and note down what kinds of information you should try to find out from the caller, emailer, or texter in order to figure out if they are an authentic authority.

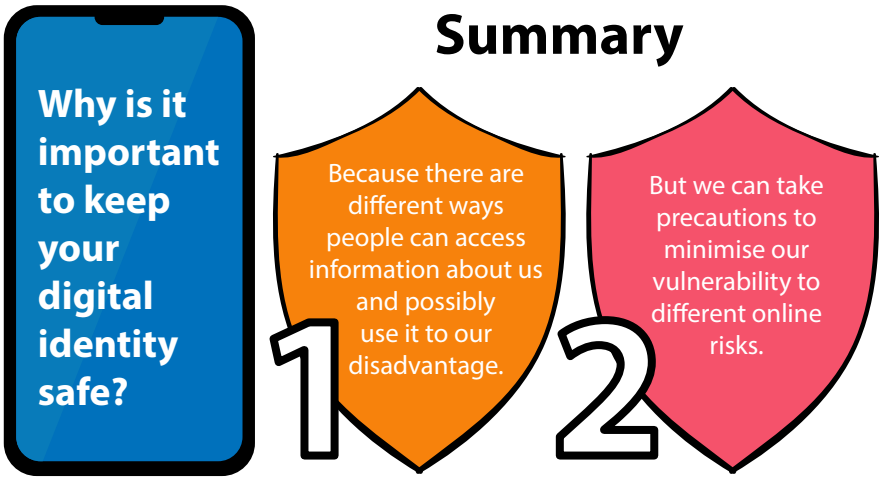

Figure 4.21. Safety online

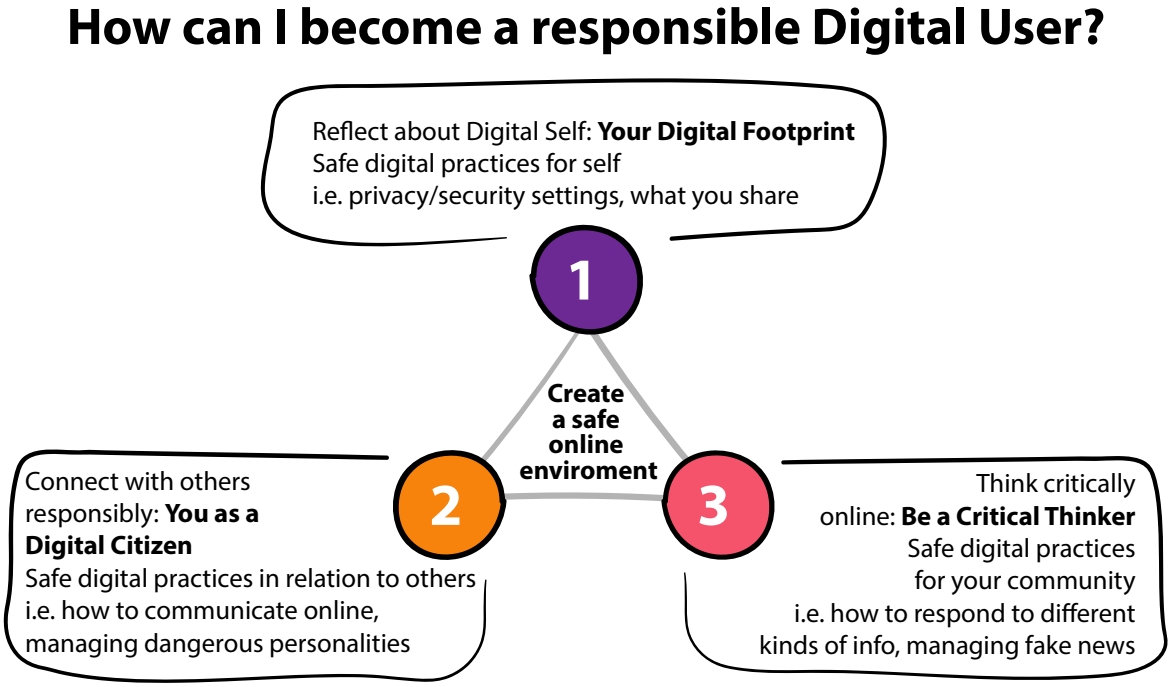

Figure 4.22. Responsible digital user

5 Apple. About Gift Card Scams. Retrieved from https://support.apple.com/itunes-gift-card-scams

Recap: Digital citizenship

Remember the aspects of digital citizenship you learnt about earlier in the lesson.

Figure 4.23. Digital citizenship

Your teacher educator will ask you about the rights and obligations you may have as a digital citizen. Debate and discuss with your fellow student teachers.

4.2.2. Digital resilience

Expected learning outcomes

By the end of this lesson, you will be able to:

- Identify and distinguish different information disorders: disinformation, mal-information, misinformation and hate speech; and
- Explain how algorithm works and discuss its impact on information processing, including the creation of echo chambers.

Different information disorders

In this era of social media use, there is not only positive, informational speech online. There are other categories of speech that Myanmar people need to be aware of whenever they are online and especially using social media apps. There are four major types of these information disorders:[6]

Disinformation

Information that is false and deliberately created to harm a person, social group, organisation or country.

In Myanmar, early on in 2020, audio clips circulated online during the COVID-19 global pandemic, with people in the audio clips pretending to be government officials alleging massive infections of COVID-19. At the time of the dissemination of the audio clips on social media, there were unconfirmed massive infections of COVID-19 by the Myanmar government and so the statements were false. However, people believed the clips, which resulted in panic buying across Yangon.[7]

An example of a social media post of disinformation can be viewed here: https://tinyurl.com/y9fao8eg

Mal-information

Information that is based on reality but used to inflict harm on a person, social group, organisation or country.

During the COVID-19 global pandemic, people on social media cited the virus's origin in China as reason to commit violence against Chinese people. It is true that the virus originated in China, in Wuhan. However, committing violence against a group of people without acting in self-defense is wrong, but such mal-information incited negative responses from many people, who also voiced interest in committing violence against Chinese people.

6 UNESCO. (2018). *Journalism, fake news and disinformation: A handbook for journalism education and training*. Retrieved from https://en.unesco.org/fightfakenews

7 Nan Lwin. (2020). Combating fake news in the time of Coronavirus in Myanmar. *The Irrawaddy*. Retrieved from https://www.irrawaddy.com/news/burma/myanmar-combating-fake-news-time-coronavirus.html

Misinformation

Information that is false but not created with the intention of causing harm.

During the COVID-19 pandemic in Myanmar, many people shared rumours on social media out of an interest in identifying root causes of the novel coronavirus. Many of these rumours were false. While their creators did not intend to cause harm, it did result in people's lack of ability to assess the truth of information they encounter on the internet.

Hate speech

Information that is false or true, used with the intention to inflict harm or highly offend or demean on a person or social group.

In many countries, there are groups of people who post information with the deliberate intent to inflict harm or highly offend or demean a person or social group, including inciting violence against a specific group of people, comparing a specific group of people to animals or other dehumanising language.

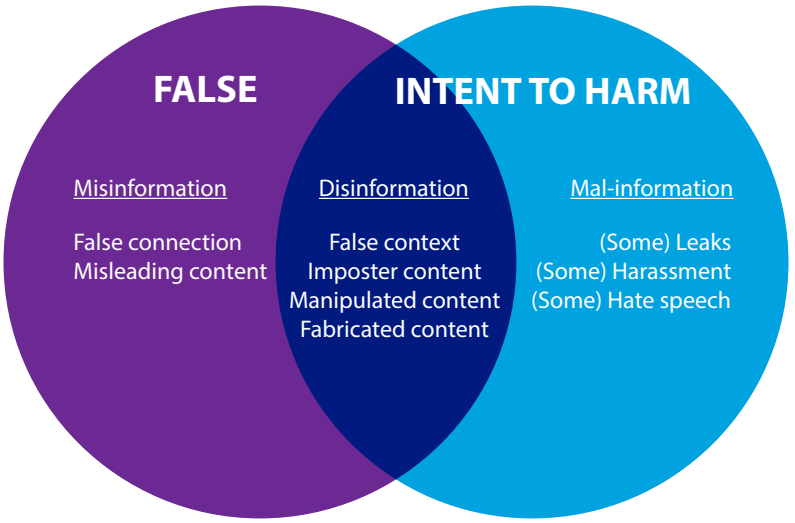

Figure 4.24. Comparing misinformation, disinformation, and mal-information

Learning activity 1. Active learning: Defining information disorders

Break up into groups and discuss different examples of disinformation, mal-information, misinformation and hate speech. You can use the whiteboard/ chalkboard, writing each of the four groupings as four columns and then writing each group's proposed example fitting under the relevant header. Try to agree on whether each group has categorised each example correctly. Then, discuss and debate the proper placement in order to reach an agreement.

Table 4.9. Information disorders

Information disorder	Definition	Example
Disinformation	Information that is false and deliberately created to harm a person, social group, organisation or country.	
Mal-information	Information that is based on reality but used to inflict harm on a person, social group, organisation or country.	
Misinformation	Information that is false but not created with the intention of causing harm.	
Hate speech	Information that is false or true, used with the intention to inflict harm or highly offend or demean on a person or social group.	

Introduction to algorithms

An algorithm is a finite series of well-defined, computer-implementable instructions to solve a specific set of computable problems.[8] The most effective algorithms are expressed within a finite amount of space and time in a well-defined formal language to perform a calculation.

The impact of algorithms on information processing cannot be understated. Many computer programmes contain algorithms that detail the specific instructions a computer should perform, in a specific order, in order to complete a specified task. Your computer, whether it be a mobile phone, desktop or laptop, simply could not function without algorithms. All search engines make use of algorithms to provide a list of websites you can visit based on the search terms you entered.

8 Math Glossary Definition of Algorithm. Retrieved from https://mathvault.ca/math-glossary/#algo

Search engine algorithm functions include:[9]

- Using natural language understanding to make sense of the meaning of your search query.
- Analysing webpages, specifically the keywords of the webpages, to assess whether the webpages contain content relevant to your search query.
- Prioritising the highest quality of content available by determining the expertise, authoritativeness and trustworthiness on a given topic. One algorithm used is how many other prominent webpages link to a given webpage, which is known as PageRank.[10]
- Assessing the usability of webpages, including whether the webpages are viewable on different browsers, whether they are designed for all devices and types and whether the page loading times work for users with slow internet connections.
- Some search engines use your location and personal user data to inform the webpage results the engines will present in response to your search query. You can choose to turn off the use of your personal user data in the privacy settings of search engines or use search engines that do not collect personal user data such as DuckDuckGo.[11]

Echo chambers

The use of algorithms in information processing has resulted in many benefits for humankind. Unfortunately, not all algorithms have been uniformly positive in their impact. Algorithms have been criticised for giving rise to online **echo chambers**, a situation in which beliefs are amplified or reinforced by communication and repetition within a closed system. Social media can be a closed system due to the use of algorithms that prioritise the presentation of social media content a user is likely to agree with given their past user behaviour that social media companies collect from the personal data of the user.

What can happen in echo chambers is that users see only content that reinforces their existing point of view rather than exposing them to new points of view outside of their worldview. Users thus become polarised, meaning that they become further

9 Google Search Algorithms. Retrieved from https://www.google.com/search/howsearchworks/algorithms/
10 Brin, S., & Page, L. (n.d.). Retrieved from http://infolab.stanford.edu/~backrub/google.html
11 Duck Duck Go Private Protection Service: https://duckduckgo.com/

entrenched in their existing points of view. Some users may even become so polarised that they adopt extreme views advocating for violence or highly offensive or abusive behaviour. When combined with politics, echo chambers can become particularly volatile.

For further reading, please see Table 4.10 on how social media companies' algorithms can create echo chambers.

Table 4.10. Algorithms and echo chambers

Title	URL	QR code	Source
Red Feed, Blue Feed	https://graphics.wsj.com/blue-feed-red-feed/		The Wall Street Journal

Recently, social media companies have been criticised for how their algorithms have created echo chambers. For example, their algorithms used to prioritise passive interactions, which means "liking" posts or other content, which social media companies then used to funnel more similar content to the user. Some social media companies have responded by altering their algorithms to prioritise active interactions, such as conversations between different users, but this is unclear as to whether this results in any improvement over the old system. For example, some social media companies are now prioritising comments, but the comments section of posts are well known to contain hate speech on politically sensitive topics.

Learning activity 2. Directed activity: Learning about algorithms

You will be asked to watch an online lesson about algorithms. Please fill out Table 4.11 according to the teacher educator's instructions.

Table 4.11. Understanding algorithms

Question/Prompt	Your answer
What is an algorithm?	
Name some common examples of algorithms in your daily life.	
Are you comfortable using algorithms that use your personal data?	YES / NO
What are the positives of using algorithms in information processing?	
What are the negatives of using algorithms in information processing?	

Learning activity 3. Research: Echo chambers

Please do this exercise in a computer lab. Using your computer web browser, please navigate to the social media website that you like to use. Fill out Table 4.12 in accordance with the content that loads on your social media feed.

Table 4.12. Understanding echo chambers

Feed content	Your answer
List the titles of the top ten posts that appear in your feed.	1. 2. 3. 4. 5. 6. 7. 8. 9. 10.
Click the three dots in the upper right-hand corner of each post and select "Why am I seeing this post?" Write the responses for each post next to the corresponding post number.	1. 2. 3. 4. 5. 6. 7. 8. 9. 10.
Do you feel that social media companies are accurately reflecting your interests in the posts that appear in your news feed?	YES / NO
If yes, why? If no, why not? Please write your answer here.	
Would you change the algorithms of the social media companies?	YES / NO
Why or why not?	

Learning activity 4. Directed activity: Link analysis

Look at the following diagram your teacher has drawn on the board:

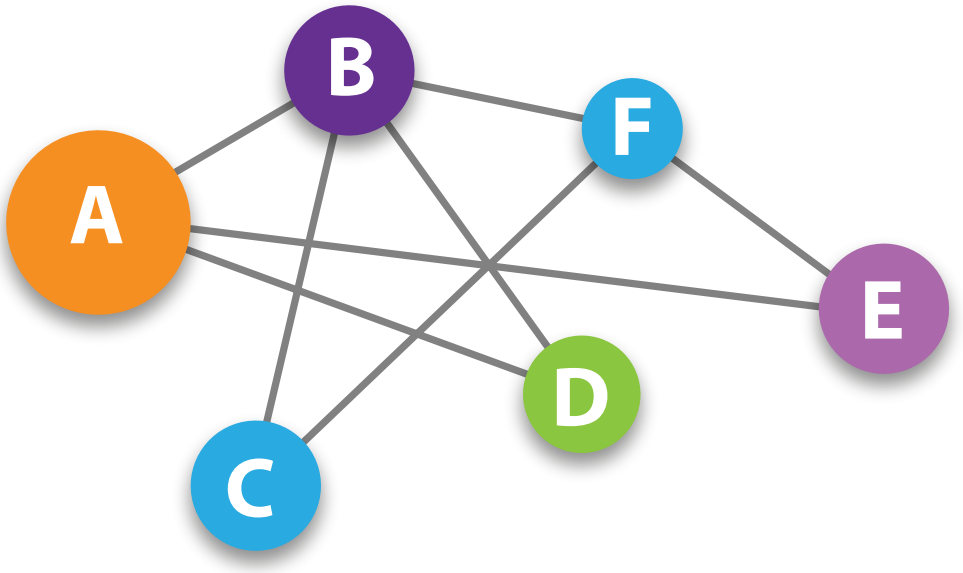

Figure 4.25. Link analysis

What do you think this diagram is? It is a diagram of a link analysis, which is a branch of data mining. The above image shows a sample network graph in which each node represents a different profile and an edge (one of the lines) showing a friendship. Considering this scenario, social media companies' algorithms may determine that the number of mutual friends between A and F is 2 and may update your feed and friend suggestions. So, whenever you press a key on your keyboard, make a call, perform a calculation, start an application or press a remote button, algorithms are processed.

If you are called by the teacher educator, go to the whiteboard/chalkboard and draw a link diagram of what you think your five strongest and five weakest relationships are. Draw lines between those relationships if they also have relationships with each other.

Review questions

1. Identify three things that can be done to ensure online safety for your middle school students.
2. Why is media and journalism considered important? How can you ensure that you and your middle school students use reliable information sources?
3. A digital citizen has the skills and knowledge to use digital technologies confidently. List five things you should be able to do as a digital citizen.
4. Why is it important to allow all students to contribute during class discussions? List three criteria for creating a safe and fair speaking environment.
5. An algorithm is a finite series of well-defined, computer-implementable instructions to solve a specific set of computable problems. List two search engine algorithm functions.

Unit Summary

Case scenario 4

The principal of the Education Degree College has called a meeting of all student teachers and teacher educators. Apparently, there have been problems of malware on the email accounts of student teachers. She tells everyone to change their passwords and not to open any emails unless they are sure of their sources.

Back in the classroom, U Thaung tells the ICT student teachers that he has suggested to the principal that they visit each class in pairs and give a brief presentation to their colleagues on how best to secure their emails and social network identities.

'Your task for today,' he says, 'is to create a short presentation that gives a clear message to the other student teachers on how to be safe online. For the next 15 minutes, make notes on what they should know and go online to search for any information that you are not sure of.'

The student teachers get to work researching and creating their presentations. The following day, they visit each class with their information. The principal congratulates U Thaung and the student teachers for their good work.

Key messages

By the end of this unit, you should:

- Have a better awareness of the power of media ownership and their impact on what you read in the press;
- Be more critical of media content;
- Be able to protect your digital identity and understand why it is important to be careful in posting personal information online;
- Have some understanding of various information disorders; and
- Be able to explain what algorithms are and how they work.

Unit reflection

Reflections on the scenario:

Think about the following questions and make notes in your journal.

1. As a middle school teacher, what can you do to ensure your students' digital identity is secure?
2. In a similar situation to the one described in the case scenario, how would you ensure that colleagues are safe online?
3. What are the main messages to communicate in such a situation?
4. What steps have you taken to secure your online profile?

Further reading

The Myanmar Press Council's website is here: http://myanmarpresscouncil.org/. You can learn about the MPC on the website, including its bylaws and code of ethics here: http://myanmarpresscouncil.org/laws/media-law.html

You can read much more about the role of ICT, Myanmar government, social media, and journalism here: https://www.myanmar-responsiblebusiness.org/pdf/SWIA/ICT/Executive-Summary-and-Recommendations_my.pdf

There is much debate about the role of advertising and journalism and whether this relationship creates any conflicts of interest. You can read more about this issue in the *Columbia Journalism Review*, one of the leading journalistic publications in the world here: https://www.cjr.org/tow_center/native-ads-endanger-newsrooms.php

The rise of false news is considered to be one of the more significant threats to citizens, but there is substantial debate over what constitues and what does not constitute false news. Facebook offers several resources explaining false news and other issues with online content in Myanmar language here: https://www.facebook.com/safety/resources/myanmar

The Myanmar Centre for Responsible Business (MCRB) has good resources for different kinds of freedom of expression issues online. You can read them here:

- https://www.myanmar-responsiblebusiness.org/pdf/SWIA/ICT/Chapter-04.01-Freedom-of-Expression.pdf
- https://www.myanmar-responsiblebusiness.org/pdf/SWIA/ICT/Chapter-04.02-Hate-Speech.pdf
- https://www.myanmar-responsiblebusiness.org/pdf/SWIA/ICT/Chapter-04.03-Privacy.pdf
- https://www.myanmar-responsiblebusiness.org/pdf/SWIA/ICT/Chapter-04.05-Cyber-Security.pdf

Unit 5

Internet and Communication

Studying this unit will give you a broad understanding of how you might use the internet to find information when using web search engines. You will learn to distinguish between Ads and search results, and understand how search engine results are used by marketing people with SEO. Instead of looking at the commercial use of the net, we will focus our attention on learning online by using MOOCs and then explore some of the other synchronous technologies used in online learning.

Expected learning outcomes

By the end of this unit, you will be able to:

- Search effectively with a specific and focused search strategy, using accurate search terms etc.;
- Use synonymous terms and broaden search when necessary;
- Differentiate between Ads and search results;
- Demonstrate an understanding of search engine optimisation (SEO);
- Use online video tutorials to facilitate thinking and problem solving;
- Explain "MOOCs" and introduce several famous MOOCs;
- Explain the types and methods of conferencing;
- Implement conferencing tools in an education setting;
- Explain how to initiate a synchronous group chat, audio call and video call;
- Demonstrate videoconferencing using apps, laptop/desktop software; and
- Demonstrate an effective and engaging activity using synchronous conferencing.

Competencies gained

A2.2 Demonstrate understanding of appropriate use of Information and Communication Technology (ICT) in teaching and learning

B1.2 Demonstrate capacity to apply educational technologies and different strategies for teaching and learning

D2.1 Improve own teaching practice through learning from other teachers and professional development opportunities

Key terms

Asynchronous conferencing, Firefox, Instagram, Khan Academy, MOOC, privacy, search engine optimisation (SEO), synchronous conferencing, videoconferencing, Zoom

5.1. Anatomy of the Web

Studying this sub-unit teaches you how to search effectively using a web search engine by using specific and focused search strategies, accurate search terms, synonymous terms and when to broaden your search when necessary. You will also learn about online advertising and search engine optimisation (SEO), important aspects of online search.

5.1.1. Strategy of using search engine

Expected learning outcomes

By the end of this lesson, you will be able to:

- Search effectively with a specific and focused search strategy, using accurate search terms etc.;
- Use synonymous terms and broaden search when necessary;
- Differentiate between Ads and search results; and
- Demonstrate an understanding of search engine optimisation (SEO).

How to conduct an effective search using accurate search terms

If "knowledge is power" then web search engines give ordinary people enormous amount of power. With just a few keystrokes, much of humankind's knowledge can be accessed. Now, anyone with an internet connection can access the most up-to-date human information available from all over the world.

If you are to be powerful users of knowledge, then it is important to learn how to search effectively. Search engine operators can be used to refine your searches:[12]

12 Google Support – Refine web search. Retrieved from https://support.google.com/websearch/answer/2466433?hl=en

Table 5.1. Types of searches

Function	Search operator	Purpose of search
Search social media	Put @ in front of a word to search social media. For example, @twitter	You are interested in looking up social media posts of the terms in your search query.
Search for a price	Put $ in front of a number. For example, camera $400	You are interested in finding out prices of products and services you want to buy, such as a car.
Exclude words from your search	Put - in front of a word you want to leave out. For example, jaguar speed -car	Some words have multiple uses – for example a jaguar is both an animal and a name of a car. You want to make sure you look up the speed of the animal, not the car.
Search for an exact match	Put a word or phrase inside quotes. For example, "tallest building"	Often you want to find two or more words exactly how they are ordered, when web search engines typically search for the prevalence of individual keywords themselves. For example, you might want to learn about the Ayeyarwaddy River specifically and not rivers in Ayeyarwaddy Region. In this case, you would search for "Ayeyarwaddy River".
Combine searches	Put "OR" between each search query. For example, marathon OR race	There are searches you want to do where you are not looking for both search terms together, but rather run each search query separately, but run them at the same time. You can do this efficiently by using OR.
Search for a specific site	Put "site:" in front of a site or domain. For example, site:youtube.com or site:facebook.com	Useful for when you forget the exact name of a website, but want to locate that website's name rather than the subject that is in the website's name.
Search for related sites	Put "related:" in front of a web address you already know. For example, related:time.com	You know the website URL, but you want to look up websites that are similar to the website you know.

Similar search terms and expanding your search

Occasionally, your search terms could be too specific, or it may turn out that the web search engine you are using employs a slightly different, but **synonymous** keywords to the one you have been using in your search queries. In this case, the use of **synonyms** – words that have the same or nearly the same meaning as the words you have been using – can give you the search results you need.

For example, perhaps you want to learn what a popular Myanmar breakfast consists of. If you just search "Myanmar breakfast food", you could get all kinds of results, not the specific food you wanted. Let's say you do not want to learn about all Myanmar breakfast food, just "Ohno Kaukswe" (Myanmar Coconut Noodles). If you type that into a web search engine your search results will be much more targeted. However,

the results that come up are mostly restaurants, which show locations and prices of not just Ohno Kaukswe, but other food they offer as well.

You want to know what Ohno Kaukswe is made out of, so you need to target your search some more. You could type in "Ohno Kaukswe recipe". Try this – the first search result shows you how to make Ohno Kaukswe!

Perhaps you were searching for "coconut pasta" instead of "coconut noodle". "Coconut pasta" has significantly different search results than "coconut noodle" or "Myanmar coconut noodle".[13] Even though "pasta" means almost the same thing as "noodle", "pasta" is typically used to describe Western noodle dishes, and so you will get mostly Western food results, even though pasta is a type of noodle. Therefore, using "noodle" and especially "Myanmar coconut noodle" is better in this case.

Let's say you got really specific in your search query, searching for "Myanmar coconut noodle made by my Aunty Htet in Sittwe in 1983." The results may or may not match what you are looking for. In this case, it is better to *broaden your search* and type "Myanmar coconut noodle recipe".

Bookmarking

For use on an internet web browser, a bookmark is a Uniform Resource Identifier (URI) that is stored for later reference to a website. All modern web browsers, such as **Firefox**, Chrome, Edge and Safari, offer bookmarking of websites. Bookmarking allows users to save websites for later access without having to use a search engine to identify the website or the user having to remember the exact URL for the website.

Social bookmarking is bookmarking done for the specific purpose of sharing saved websites or other web content with other online users. Unlike traditional bookmarking, social bookmarks can be easily shared with friends, so they can access the same content as you. Popular social bookmarking sites include Pinterest, Medium and Reddit.

13 Duck Duck Go Private Protection Service. Retrieved from https://duckduckgo.com/?q=coconut+pasta&t=ffab&atb=v138-1&ia=recipes

About search engine ads

Search engine advertising is a type of online marketing. Advertisements ("ads" for short) in the form of text, images, audio and video are posted in search engines such as Google or Bing, or as "Sponsored" posts in Facebook, **Instagram**, or TikTok. For Google or Bing, these ads appear in search engine page results (SEPRs), whereas with Facebook, Instagram and TikTok, these ads appear in the main news feeds. Such ads are the main source of income for social media companies: advertising comprised over 80% of Google's total revenues for 2019 and over 95% of Facebook's total revenues for 2019.

Advertisers like buying ads from social media companies because the costs are typically much lower than traditional media: ad charges to advertisers are measured in cost per click (CPC) and/or cost per mille (CPM). *Mille* is a French word, meaning 1,000. Cost per click means that the advertiser is charged every time a user clicks on an ad. Cost per mille means cost per 1,000 *impressions.* An impression is one instance of an ad displaying on a user's screen; the advertiser is charged every time a user sees an ad on their screen.[14] Both CPC and CPM tend to be less than USD $1, which tends to be much cheaper than traditional media advertising. Further, large social media companies have many users, which allows for wide distribution of ads; as of this writing, Facebook has nearly 2.5 *billion* monthly active users.

It should be noted that your search results will not only contain the results from the algorithms used by the search engine company but are also likely to display advertising (ads) that the search engine company moves to the top of the search result list. Search engine companies do this because digital ads are the primary revenue generator for these companies, so they have very strong incentives to display ads first in search results. You can tell when a search result is an ad by noting the Ad symbol next to the URL in each search result. For social media company ads, a post is an ad when you see the Sponsored text below the poster's name in the post. Ads always appear at the top of search engine results, while they tend to be near the top for social media companies' feeds.

Sometimes ads results will be exactly what you are looking for. This makes sense, since search engine companies match the ads results with keywords you use in your search queries. For social media companies, ads posts are associated with your

14 Facebook Business Support. Retrieved from https://www.facebook.com/business/help/675615482516035

interests that you previously expressed by clicking on, liking, commenting on and sharing content, as we showed in the previous lesson. But sometimes the ads are not what you want, or maybe they are of less priority to you than other search results. It is good to be aware of ads since they may not be exactly what you want and you might prefer non-ads search results.

Search engines such as Google use cookies to optimise the ads you see in search results. Cookies are tiny text files that are stored on a user's browser. Most cookies contain a unique identifier called a cookie ID: a string of characters that websites and servers associate with the browser on which the cookie is stored. This allows websites and servers to distinguish the browser from other browsers that store different cookies and to recognise each browser by its unique cookie ID.[15] Cookies are widely used by websites and servers to provide many of the basic services we find online. If you shop on a website, a cookie allows the website to remember which items you've added to your virtual shopping cart. If you set preferences on a website, a cookie allows the website to remember your preferences the next time you visit. Or if you sign into a website, the website might use a cookie to recognise your browser later on, so that you do not have to sign in again. Cookies also allow websites to collect data about user activity, such as how many unique visitors a page receives per month. All these applications depend on the information stored in cookies.

Search engines use the information from cookies to more closely fit the ads to your interests based on your previous search history and web browser use. It is important to note that your activity online is often being tracked by the use of cookies. In every major web browser, you will be able to deactivate third-party cookies from tracking your online activity in the browser settings. However, this may limit your ability to login to certain websites or use certain online services, in exchange for enhancing your privacy online.

A compromise option is to regularly delete your cookies from your web browser. All major web browsers feature an option where the browser automatically deletes all cookies every time you close the web browser. The downside of this is that you will have re-login to every website whenever you reopen the web browser. The positive is that your online activity will not be perpetually tracked; each new web browser use is a new session.

15 Google Support. Retrieved from https://support.google.com/searchads/answer/2839090?hl=en

When you load webpages as you browse the Internet, your web browser caches web content in order to enable website elements to load faster the next time you access the website. Over time, web browser caches grow rather large, taking up a significant amount of space on your hard drive. You can clear the **cache** through your web browser's settings; you may clear up a lot of space on your hard drive with the tradeoff of pages loading more slowly the next time you visit them.

Search engine optimisation (SEO)

Search engine optimisation (SEO) is an important technique which advertisers use in order to have their desired website appear in the number 1 position of your search results. This is because plenty of research has shown that most users only click on the top 1 or 2 search results and almost navigate past the first search results page. Over 34,000 searches are conducted on web search engines every *second* and 75% of users never navigate past the first page of search results.[16] One study has shown that 53% of users only click on the first search result link.[17] Therefore, if you have a website you are trying to drive users to, having a good SEO strategy is key.

Learning activity 1. Active learning: Performing and refining searches

Please do this learning activity in the computer lab. If a computer lab is not available, you can use the mobile phone provided by your teacher. Using your device, please navigate to the web search engine of your choice.

Think of something you want to search for.

For example, perhaps you want to learn what a popular Myanmar breakfast food consists of. Or you might want to know what *Ohno Kaukswe* is made out of.

You may write down your search question here _____.

Did you find what you were looking for? If not, using the table from earlier in your lesson to try one or more of the techniques to improve your search. Document how you improved your search in Table 5.2 with two additional new search queries.

16 Kagan, M. (n.d.). 100 awesome marketing stats, charts, graphs, and data. Retrieved from https://blog.hubspot.com/blog/tabid/6307/bid/14416/100-Awesome-Marketing-Stats-Charts-Graphs-Data.aspx

17 53% of organic search clicks go to first link. Retrieved from https://www.searchenginewatch.com/2012/10/10/53-of-organic-search-clicks-go-to-first-link-study/

Table 5.2. Searches you want to perform

What you want to find	Your first search query terms	Your revised search query terms	Your further refined search query terms	At which search query point did you find what you were looking for?
Location of most famous Bagan pagoda	Bagan pagodas	Famous Bagan pagodas	#1 famous Bagan pagoda	3rd search

Learning activity 2. Active learning: Identifying search engine advertisements

Open up your preferred social media app. Scroll through your feed and identify the posts that have the Sponsored text below the poster's name. Fill out the below table with five of the sponsored posts you have identified on your feed.

Table 5.3. Sponsored post examples

Example of sponsored post page name	Example of sponsored post title	Do you like the sponsored post?
Myanmar Institute of Education – MIE	Nov Intake အတွက် လူပြည့်ပါတော့မည်။ အမြန်ဆုံးလာရောက်ပြီး အပ်နှံနိုင်ပါသည်။	Yes
Ministry of Education, Myanmar	Website ဖြစ်သော www.moe.gov.mm တွင် သက်ဆိုင်ရာ အမျိုးအစားအလိုက် ဝင်ရောက် ကြည့်ရှုနိုင်ပါသည်။	Yes
Myanmar State Counsellor's Office	State Counsellor returns to Nay Pyi Taw from Mekong-ROK Summit	Yes

Example of sponsored post page name	Example of sponsored post title	Do you like the sponsored post?

Note that when you see the blue mark next to a page name, the page has been independently verified as being an authentic page by the social media company. This means that you can be assured when a page has a blue mark that it is the official page of the actual real-life person or entity the page represents.

Learning activity 3. Active learning: Bookmarking

In this exercise, we will practise bookmarking websites that you want to remember. A bookmark is a shortcut that you saved so that you can quickly return to the identified website again.

To save a website as a bookmark, you can usually click on a star icon in the URL bar of your web browser or else select "Bookmark this tab" or "Add new bookmark" in the Bookmark menu in the menu bar of your operating system.

Working with a partner, navigate to websites on a computer or smartphone that you visit frequently. Use the bookmarking menu features in the web browser to save the bookmarks. All major web browsers will feature a dedicated "Bookmarks" menu in the title bar of the application:

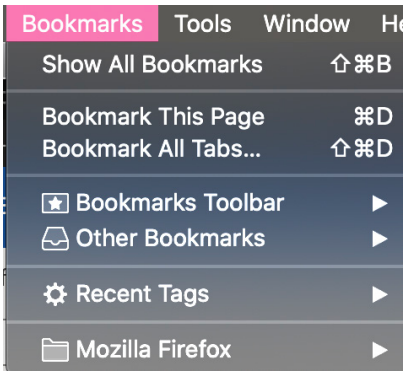

Figure 5.1. Bookmarks feature

After creating a few bookmarks, use the Bookmarks menu to select the bookmarks you have saved to navigate back to your saved websites:

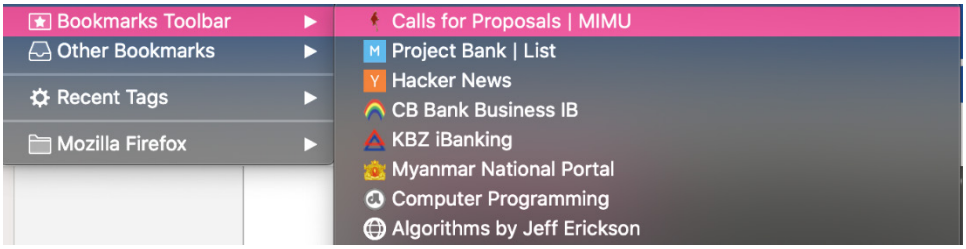

Figure 5.2. Saved bookmarks

In the table below, please list the websites you created bookmarks for and why.

Table 5.4. Bookmarked websites

Bookmarked website	Reason for bookmarking
www.google.com	Conduct searches frequently

5.1.2. Engaging online video tutorials

Expected learning outcomes

By the end of this lesson, you will be able to:

- Use online video tutorials to facilitate thinking and problem solving; and
- Explain "MOOCs" and introduce several famous MOOCs.

Introduction to online video for learning

Online video makes it possible to learn from teachers on your computer or mobile phone screen. An online course or tutorial can include online video in its structure. This video could be a personal introduction, a narrated explanation associated with an animation or a straightforward recording of a lecture. Online video is intended to complement the presence of a teacher that normally would come with a face-to-face classroom. Online video also has several unique advantages. If you fail to understand a certain point in a lesson, you cannot rewind to go back. But with an online video, you can go back to the timestamp in a video lecture and watch it again and again.

Many people think that YouTube is the only format for online video learning. Online video can be a combination of text, video, audio and interactive user interfaces. Online video need not be about one-way broadcast. If students use their own web or phone cameras, they can also post and exchange information and help each other out with concepts or techniques.

As a teacher, you can use online videos to supplement your own classroom teaching. For example, students may be having trouble learning concepts you teach in class – you can refer them to an online video in order to get different perspectives about the concepts. Or, you may find that there is too much to cover within a limited time. Online videos can provide additional exposure for student teachers to learn from experienced experts.

Online videos can also be useful for your own advancement as an educator. There are several benefits to connecting via your screens to learning or professional development:[18]

1. Flexibility: The one thing educators need more of is a flexible way to gain the knowledge and skills they need to do their jobs better. Learning online encourages this by offering a variety of schedules and times for both asynchronous and synchronous video.
2. Continuous reinforcement of content and skills: Unlike one-day workshops, online video creates an on-going opportunity for viewers to learn new content and view demonstrations and explanations of skills, thus providing the time for educators to receive continuous support to help with mastery.

18 Asia Society. Five benefits of online learning for teachers. Retrieved from https://asiasociety.org/five-benefits-online-learning-teachers

3. Real world application of theory: Using multimedia, including chat rooms, video and interactivity, educators can begin to see how particular educational theories can come to life in the classroom. By demonstrating specific practices using video, theory can come to life.
4. Save time: Time is one of the most precious commodities for educators. By eliminating the need to commute to a university during evenings and weekends, educators can spend more time on learning concepts than travelling to class.

Online learning resources

MOOCs stands for Massive Open Online Courses. The courses are free, they cover a diverse range of subjects and are accessible to learners across the globe. Usually, MOOCs can be completed at the learner's own pace allowing flexibility. They are written, supported and endorsed by educational experts in the relevant subject field. Online learning resources such as Khan Academy offer MOOCs and other online courses.

Khan Academy was started by Salman Khan in 2005 in his garage in the United States to help his cousins prepare for classes and exams.[19] Khan Academy online courses are now taken by millions of people all over the world. Khan Academy courses have been translated into 40 languages as of this writing,[20] in addition to some lectures being translated into Myanmar language! You can find these lectures here: http://www.khanacademyburmese.org/about

Khan Academy has free tools for students and educators. You can find these resources here: https://www.khanacademy.org/resources. We will make use of these tools in the learning activities below.

There are also free online courses available on YouTube. For example, Harvard University offers many free courses on YouTube, including its most popular course for Harvard undergraduates, "Justice". You can view a sample Justice lecture here: https://www.youtube.com/watch?v=kBdfcR-8hEY

19 About Khan Academy. Retrieved from https://www.khanacademy.org/about/the-team
20 Khan Academy. Retrieved from https://www.khanacademy.org/about

Learning activity 1. Active learning: Joining an English language online video tutorial

Load the Khan Academy website on your device: https://www.khanacademy.org/ (or a learning source of your choice). Using the search bar on the Khan Academy website (or MOOC you selected), enter search terms for the subject you want to study, such as "Maths" or "History". You can also click on the "Courses" menu and browse the courses that appear there. For example, if you clicked on the "Arithmetic" course, the following Khan Academy screen would come up:

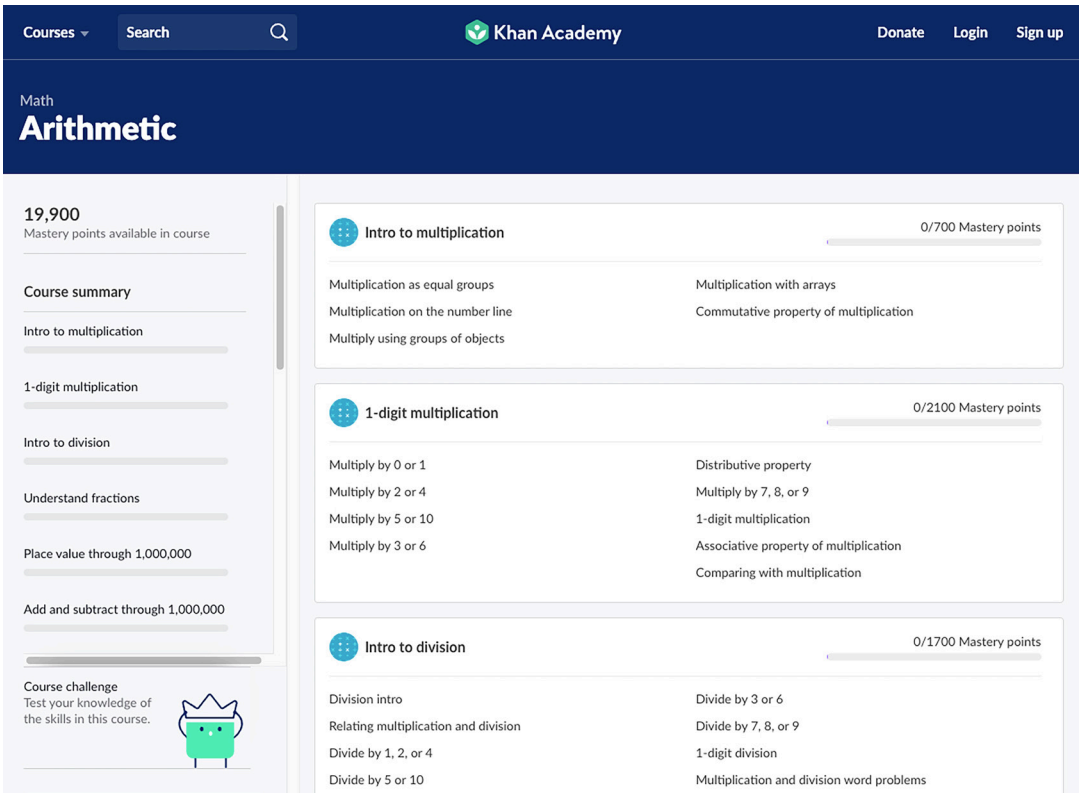

Figure 5.3. Khan Academy screen for its arithmetic class

You can click one of the modules, such as the "Basic addition and subtraction" course, and then select one of the videos in that module to watch, such as "Basic addition". The following video comes up:

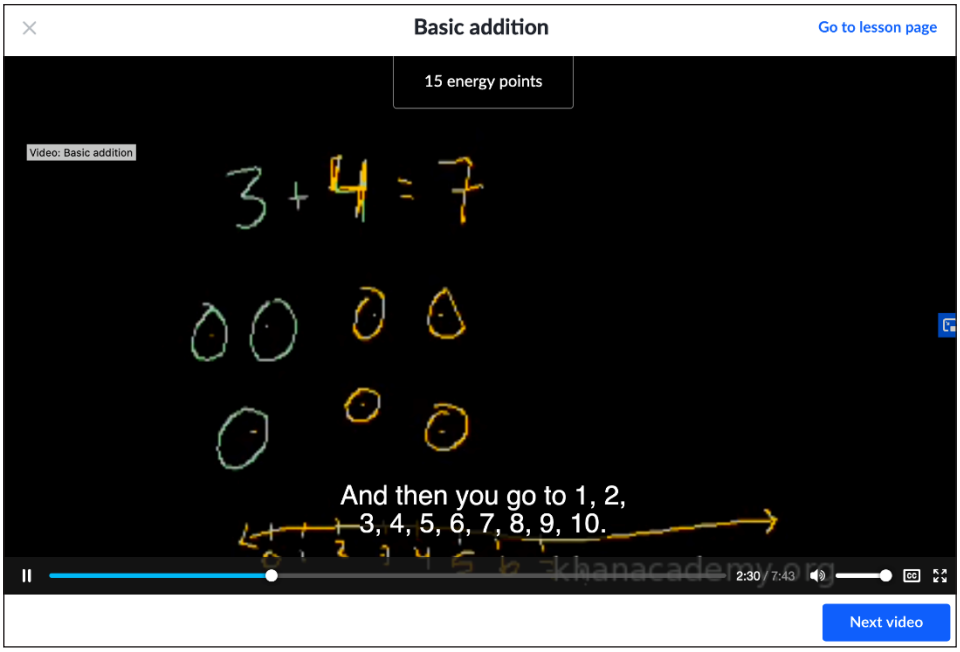

Figure 5.4. Khan Academy basic addition video

And that's it! That's how you watch a video on Khan Academy. Feel free to spend more time browsing different videos and subjects. All of these materials are free. Much of the world's knowledge is free at your fingertips with online learning.

When you are finished watching the videos, please fill out Table 5.5 with your impressions of the videos you have watched.

Table 5.5. Responses to videos

Prompt	Your answer
Overall, I felt the course was....	
By watching the videos, I learnt....	
I would recommend this course to a friend	YES / NO
I would recommend MOOCs to a friend	YES / NO
Other thoughts?	

Learning activity 2. Active learning: Joining a Myanmar language MOOC

Unfortunately, many of the most popular MOOCs do not offer Myanmar language. However, there are some Myanmar language learning materials online. We will spend this lesson to test one of the MOOCs available in Myanmar language.

Your teacher educator will have groups of you each select one of the MOOCs below.

Table 5.6. Myanmar language MOOCs

Title	URL	QR code	Source
Lann Pya	https://play.google.com/store/apps/details?id=com.koekoetech.myjustice&hl=en_US		MyJustice
MyoTaw chatbot	https://web.facebook.com/myotawmunicipalapplication/		Myanmar Local Government
DedaaBox	https://play.google.com/store/apps/details?id=com.biipbyte.dedaabox&hl=en_US		DedaaBox
Pyo Pyo May	https://play.google.com/store/apps/details?id=com.keoeoetech.pyopyomay&hl=en_US		SPRING

For those of you with smartphones, download the MOOC onto your smartphone. For those of you without smartphones, look on your colleague's smartphone.

When you are finished using the MOOC, please write your impressions of the MOOC on the table below.

Table 5.7. Myanmar MOOC impressions

Prompt	Your answer
Overall, I felt the Myanmar MOOC was....	
By using the Myanmar MOOC, I learnt....	
I would recommend this MOOC to a friend	YES / NO
I would use this Myanmar MOOC again	YES / NO
Other thoughts?	

Review questions

1. What does SEO mean and why is it used?
2. Why would you use a bookmark, and where can you find the tool required to bookmark a website?

5.2. Synchronous Conferencing

Synchronous conferences are a wonderful way for you to have a real time conversation with another group of people located in different cities, countries or continents. These virtual meeting spaces allow users to reach out beyond their school, district or network and create space for dialogue between experts and novices. When synchronous conferencing technologies are deployed in an educational setting, then students and teachers can connect across the globe to each other and learn together.

Studying this sub-unit will enable you to understand the types and methods of real-time conferencing, explain best practices when initiating a group audio/video call using conferencing software, demonstrate different rich media conferencing possibilities via apps and demonstrate laptop/desktop software.

5.2.1. Understanding synchronous conferencing tools

Expected learning outcomes

By the end of this lesson, you will be able to:

- Explain the types and methods of conferencing; and
- Implement conferencing tools in an education setting.

Remember that in ICT Year 1, Lesson 1.2.1, you were introduced to asynchronous and synchronous conferencing:

- **Asynchronous conferencing** is when there is a delay in the participation of the participants since "asynchronous" means "something not occurring at the same time or delay between two or more points".
- **Synchronous conferencing**, by contrast, means that when there is no or very little delay (limited only by the speed and availability of the Internet connection) in the participation of the participants.

Historically, a teacher would teach a lesson at a certain time on a certain day. This teacher would communicate directly with a group of students and set the pace at which the class would complete the work that had been set. This can be described as synchronous teaching. As the postal service improved and communications technology developed, it became possible for educational institutions to assist students who were unable to study in a classroom because of distance or other circumstances. Whether by correspondence, radio or via email, a remote student could have a curriculum of lessons delivered to them. We describe this type of education as asynchronous.

When ICT is used for a group of middle school students in an asynchronous situation, each student has the flexibility to choose the time when to participate in engagement facilitated by ICT and a location that suits them. Students could, for example, receive group emails with links to online learning activities and each student would finish those activities at a pace and place that suits them.

Scenario: Far away from home

Twelve-year-old Nan Nge Yan sat alone in the gardens of the monastery in Yangon's outer eastern Thanlyin Township, phone in hand. Weekends were when she really missed her parents and younger brother who lived in Khanwae village. They lived hundreds of kilometres away in the southern Shan State. Her mother and father had saved for years to send her to stay at Panditarama Thanlyin monastery in Yangon and attend school there. They hoped she would learn to speak Myanmar Language better at the Thanlyin school than in their local school village.

As she sat in the garden, looking at her phone, Nan Nge began to wonder whether there was a way in which technology could be used to help her younger brother learn to speak Myanmar Language, without having to leave their hometown. She had seen how her teacher had invited a guest speaker from another province to address the class and how the "visitor" used "conferencing" to teach them via the class computer. Perhaps with conferencing technology, her brother could also learn to speak Myanmar Language fluently, even as she studied from a distant teacher? Idly, she opened up her phone, went to Google and typed in the keywords "mobile language learning". After pressing search, she was surprised at what she discovered!

With the internet, cloud technology and faster networks, it has become possible for students and teachers to all use technology at the same time in different settings. Students could, for example, all turn on their web cameras on their laptop devices, see each other and the presenter and communicate with each other. We call this type of teaching "synchronous conferencing".

A student who is using asynchronous conferencing could then communicate at midnight from his or her bedroom. Asynchronous conferencing usually will make use of technologies such as email or discussion boards. When using synchronous conferencing, the students could still collaborate from their bedrooms (location) but they would need to use the platform at the time as all the other participants.

Synchronous technologies

Synchronous conferences technologies can be described as either:

- Point to point, where two computing devices are connected using a variety of media, or
- Multi-point conferencing, where more than two computing devices are used.

Types of synchronous conferencing technologies include:

- Desktop videoconferencing systems: Conferencing is possible from your PC computer. May or may not include use of the computer's camera – use of audio only may suffice, but full-motion meetings are possible when participants view each other using device cameras on their computers and connect from different locations.
- Integrated conferencing in a classroom: Where screens, projectors, cameras and other pieces are permanently mounted in a centralised position.
- Chat (real-time): Where participants can enter text and often send attachments, photos, GIFs, or videos, to each other in real time. Some examples of chat apps include Messenger, Viber, WhatsApp, BeeTalk and Slack.
- Voice (telephone, VoIP): This is a conference call between participants using voice cellular networks or data networks.
- Web conferencing: Similar to desktop conferencing but typically involves more interactive elements, such as being able to click on a screen in response to in-conference polling.

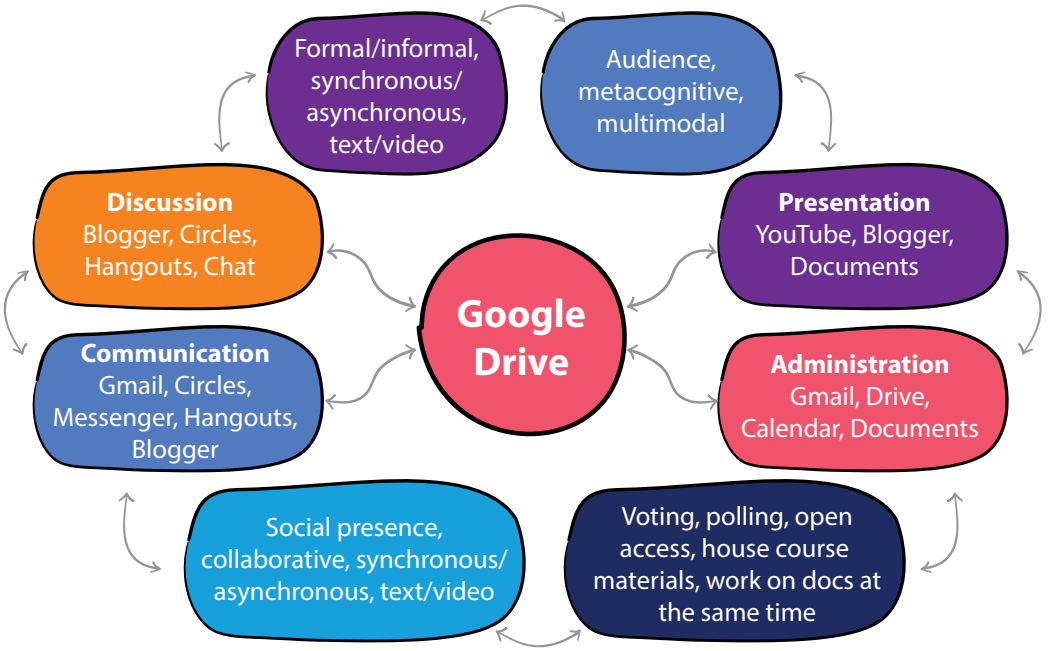

Figure 5.5. An example of a synchronous conferencing universe

Synchronous conferencing is a powerful development, using the existing improving undersea internet cable global rollout and availability of 4G networks. This technology has enabled people from all over the world to exchange information via conversation, file transfer, imaging and interactive elements in real time. For example, in telematics teaching, an educational specialist can address a class of head teachers without being together in the same expert's office. A teacher union can hold synchronous meetings and thus save their members' time and costs. Or, an overseas aid agency might use synchronous conferencing as a collaboration tool for working together with a team of educators.

There are several benefits to using videoconferencing in education. Here are a few:

- Stimulates global collaboration: For example, the American Center in Yangon features videoconferencing technology called "The Portal"[21] where student teachers and students from all around the world can communicate with each other. For example, a call was held using the Portal in Yangon

21 https://www.sharedstudios.com/

with students from middle and high schools in Baltimore, Maryland USA. By using videoconferencing, people from different cultures, backgrounds, races, genders and religions can communicate with each other on common ground and learn more about each other's societies.

- Promote distance learning: It may turn out that some schools do not have the resources that other schools have, such as teaching aids. By using videoconferencing, schools that have more resources can display them to schools that have less resources.
- Effective administrative tool: Videoconferencing can help school administrators and the government to communicate new education initiatives to student teachers. Previously, student teachers may have only had access to written correspondences in the mail or postings at the school. By using videoconferencing, more dynamic administrative updates can be given.

However, there are also challenges associated with using technology in real time to communicate. Audio and video quality varies and there can be technical difficulties, such as buffering, which waste time and create unwanted delays. Some people also prefer face-to-face interactions as they can also pick up a range of other non-verbal cues that will help with communication.

Components of a synchronous conference for learning

Quality real-time online learning events have many components. They include the topic, the way the time is structured, the interactions etc. Synchronous conferences are *supported* by technology, but they are not *about* the technology. If you are going to host a synchronous conferencing event, you will need to move beyond deciding which synchronous conference technology is the best option and consider the many components. One of the first steps towards holding a quality conference is to be very clear about the purpose of the event.

Goals or purpose: Why do you want to meet face-to-face at the same time?

There will probably be different reasons given for running a synchronous conferencing event. They could include:

- Getting to know fellow classmates
- Teaching a topic

- Discussing a topic and distributing useful information
- To allow others to participate in a discussion between experts

The topic and goals of such an event needs to be clearly communicated. A poorly thought through synchronous conference experience can have negative effects:

- In future, participants may be less willing to join another conference.
- In the conference, they might ignore instructions to participate.

Once you are certain about the purpose and goals, then you will be able to answer the following five questions:

1. Who you will invite?
2. What will be the agenda?
3. Decide which activities you will use to stimulate an engagement or a response?
4. Delivery responsibilities, who will fill the roles of:
   a. host?
   b. technical expert?
   c. moderator?
5. How you intend to report back and follow up?

Invited participants: Guests or presenters need to be introduced. These introductions could include background and credentials.

Agenda: An agenda is a useful way to manage expectations. It offers the participants in a synchronous conference a sense of direction, a logical structure and an easy to follow sequence.

Interaction activities: A good synchronous conference is an interactive event. Plan activities that show that you are interested in them and care about their opinions:

Getting/giving information

Ask an icebreaker question: It is important to know who your audience is. Make them feel welcomed with a light-hearted question, for example, if you had a superpower, what would it be? If there are lots of participants, request that answers be posted in the chat box.

Conduct an instant poll or survey: Surveys require a bit of fore-thought and preparation. Put together a few simple yes-no questions or single-choice questions and post them in the chat box.

Icons and avatars: Receive quick feedback from your participants by asking them to use an avatar, icon or emoji in the chat box to show how they are feeling.

Discussing and making meaning

The flipped classroom: Ask participants to watch lesson material on their own before they join the synchronous conference. This allows more time for interaction questions, feedback and takeaways.

Personal story: Storytelling about some journey you have been on in a familiar setting can spark interest. Then ask a few individuals to ask questions about the story.

Two speakers in an interview: When there are two speakers, then there will be different kinds of information, viewpoints, presentation styles and voices. This will probably make for an interesting discussion.

Innovating: Brainstorming, ideation activities, prototyping

- **Music or video clip:** Use a small segment from a talk to spark conversation. Or, set the tone for a meeting with music that creates a relaxed atmosphere. Make sure why you are entirely clear about using multimedia.
- **Scavenger hunt:** Set up a range of questions for participants to "scavenge" around the web and hunt for answers. Then, meet again where findings can be shared and discussion held.
- **Screen share:** Give a participant control of the screen and ask them to show an example or a work that can then be discussed.

(Adapted from So You Want to Host a Web Meeting? By Nancy White, with Pete Cranston, Susan Stewart and Bonnie Koenig).

Delivery responsibilities

Webinars require variety and the event should transition between presentation, discussion and reflection. Managing these transitions can be a challenge, especially when there are many different people involved. It might be suitable to appoint different people to take responsibility for the different aspects of delivery and not expect the speaker to be the technical expert, moderate the chat and chair the event.

Wrap-up

Not all participants will be able to attend a synchronous event and it is a good idea to think ahead of what should happen after the event. Perhaps there might be a recording available, or handouts to download or a survey. Participants will usually remember the beginning and the end of a synchronous event, so it is important to plan your conclusion carefully.

Remember, if you are using synchronous tools in a classroom setting, the activity that you are going to use has to correspond with the way technology choices. For example, an icebreaker for a large class would be set up quite differently to a panel discussion between experts. The instructions will need to be clearly communicated before the synchronous conference event. You will need a concise sequence of steps or directions been written up to introduce the interactive activity to participants. To make the environment, more welcoming, you might want to think of clear and engaging visual aids to prompt participation. Or, find other ways to offer a welcoming learning environment where the whole group is managed with ease, including the hesitant students who choose to be quiet and not be involved. And then, you will also need to think about the technical challenges that may be facing the participants and whether you have a relevant back up plan in case of technical failures.

Learning activity 1. Discussion: Likely or unlikely propositions

There are a lot of misconceptions about conferencing, often because it is an unfamiliar concept and unlikely when people do not have hardware. Read the scenario: “Far away from home again” and then look through the following ten propositions. After reading through these statements above, in pairs, decide whether they are likely or unlikely statements for a student who wants to learn English as a language without having to leave home. You might want to quote examples of “proof” or share counter narratives.

1. Synchronous conferencing will one day replace the face-to-face classroom.
2. Synchronous conferencing requires a multimedia specialist and is too tricky for teachers to master.
3. Online conferences are boring and not interactive.
4. Conferencing apps are only popular because of their novelty.
5. Collaborating across borders requires expensive tools and programmes.
6. People who do not own hardware are disadvantaged by synchronous meetings.
7. Videoconferences are exactly like classroom teaching.
8. Chat apps are only for teenagers who like socialising.
9. The high costs associated with conferencing make this approach unsuitable for education.
10. Conferencing is for spoon-feeding information to students.

Learning activity 2. Practical: Plan a micro-conference with a technology of your choice

One of the problems with synchronous conferencing is that when people hear the term, they assume this is like a TV broadcast or show, where one or a few people deliver content to a wider audience, and then there is the possibility of question and answers at the end.

Synchronous conferencing offers the opportunity to talk with each other and not only talk at each other. But many teachers who use a synchronous technology neglect to think about how they might go about fostering interaction and enabling dialogue. In this activity, you will be asked to select and develop one of the listed interaction activities. Together with a partner, you will complete the following worksheet so that you might be able to deploy the interaction activity pro-actively in a synchronous environment.

Worksheet

1. Purpose of the synchronous conference:

Describe the reasons for holding a synchronous conference.

2. Participation activity:

Name and describe the participation activity that you intend to use.

3. Visual aids to stimulate participation:

Choose and name the relevant visual (chart, table, cartoon, photograph, illustration, and icon) to stimulate the intended interaction.

4. Instructions for participation:

Create a quick start guide for participants that explains how they are expected to act.

5. Technical failure:

Create a backup activity that can be run offline in case of technical failure.

Learning activity 3. Pair work: Run an interaction activity using synchronous tools

Review the worksheet that you completed in Learning activity 2. Remember how you prepared own micro-conference participation activity (not a whole lesson).

Are you ready to use synchronous conference technology and interact (at a distance) with someone else? You are going to present your synchronous interaction activities on conferencing software to another pair of student teachers.

Once you have designed your lesson, share it with your teacher educator and fellow student teachers.

Critique each other's lessons using the following questions:

- Is it an effective use of conferencing? Why? Or Why not?
- Will it keep your students' attention? If yes, how? If not, how can it be improved?
- If the internet crashes, is there a relevant offline activity prepared?

Your teacher educator will assess your micro-conference by using a rubric – shown in Table 5.8. He or she may ask you to peer-assess or self-assess using the same rubric.

If the synchronous technology is not available, then don't worry. Many schools have now set up international links with other schools across the globe. Please carry on with the work you began in Learning activity 2 with their partner and prepare a set of instructions and resources that might be able to deploy when participating an international link with other schools.

Table 5.8. Rubric for student teachers' micro-conferences

Fit for purpose	The activity does not appear to be suitable for the given purpose. Nor does it recognise challenges faced by participants.	A suitable activity that fits the purpose of the synchronous conference has been selected.	The activity is fit for purpose and is designed in a manner that anticipates participants' challenges.
Visual aids	Visual aids are primarily decorative and do not lead to participation.	Visual aids are used primarily to push students towards participation.	Visual aids pull the student into engagement. They stimulate participation, they encourage users to explore ideas and ask questions.
Instructions	Written instructions, if any are provided, are generic.	Written instructions have been clearly written and directly support the activities purposes.	Clearly written instructions support the intentions and anticipates some of the potential roadblocks that might affect the user.

Supporting online learning	Recognises individuals who are not participating.	Creates a welcoming environment and recognises individuals.	A welcoming learning environment where the whole group is managed with ease, including the hesitant students who choose to be quiet and not be involved.
Technical skills	Can make use of basic conferencing tools.	Proficient use of tools in a synchronous learning environment.	Uses advanced synchronous conferencing tools and can also deliver support to participants quickly.

5.2.2. Synchronous conferencing tools

As a student teacher, you need to think of how you could use a conferencing tool in your classroom to expand learning opportunities for your students. In the previous lesson, you learnt about synchronous conferencing and how it can be used in an educational setting. You have also been introduced to the benefits of using conferencing tools for collaboration, distance learning and as an administrative tool. You are also aware of issues to consider when arranging a synchronous session.

Expected learning outcomes

By the end of this lesson, you will be able to:

- Explain how to initiate a synchronous group chat, audio call and video call;
- Demonstrate videoconferencing using apps, laptop/desktop software; and
- Demonstrate an effective and engaging activity using synchronous conferencing.

Initiating a group chat, audio call and video call

There are many powerful and successful synchronous conferencing apps out there today. Some current examples of these apps are Messenger, Viber, WhatsApp, Slack and BeeTalk. You will learn how to initiate a group chat, audio call and video call using some of these apps.

Open the chat app of your choice. For this example, Viber will be used but the functionality is very similar across chat apps. The initial screen of your chat app typically lists the most recent conversations you have had in a list.

Create a new chat by tapping the Chat/Message button – it may be a different colour, but the message button generally looks the same across chat apps. You will see writing that says, "Create a New Group". Tap on that button.

On the next screen, select the people you want to add to the new group from your contacts list. Once you are finished adding people, click the "OK" button or the "Check" button.

Your new chat group is created. Start typing to communicate with other members of your chat group. For audio, in the same window, you click the phone icon to initiate a VoIP call. For a video call, you click the video icon.

Videoconferencing

Videoconferencing can be a very useful way to increase productivity in education by allowing different student teachers and students to communicate while being in different locations. Reflect from ICT Year 1, the term "conferencing", which means when "…two or more people have simultaneous conversation using the internet, it is called conferencing. When this process is adding video streaming technology, it is called videoconferencing."

Synchronous conferences using video are not the same as a TV broadcast. One of the problems with synchronous conferencing is that when people hear the term, they assume this is like a TV broadcast or show, where one or a few people deliver content to a wider audience and then there is the possibility of questions and answers at the end.

- Broadcast technologies are mainly "one to many" and one way.
- Videoconferencing technologies are primarily many-to-many and used for two-way and multiple connections.
- A warning: If you are using a telco data network connection with a pro-rated data charging rate such as Telenor, Ooredoo, MPT, or MyTel to conduct a videoconference, beware that you could use a lot of your data plan by having a long videoconferencing call.

Laptop/desktop software such as Zoom, BlueJeans and Skype

Videoconferencing can also be used on laptop and desktop computers and often with even more functionality as laptops and desktops have larger screens (so more information can be displayed at one time) and physical 'QWERTY' keyboards (recall these from ICT Year 1, Lesson 3.1.2) are larger and feature more keys at one time than mobile phone virtual keyboards. Users can use all ten fingers on their hands to type instead of only two thumbs for the mobile phone virtual keyboard.

Videoconferencing on laptop and desktop computers makes a lot of sense, especially for educational, business and governmental applications. Videoconferencing software for these computers has been around longer than for mobile phones; sample software includes **Zoom**, BlueJeans and Skype.

Open the videoconferencing app of your choice. All apps usually offer the same choices: set up a new meeting, join an existing meeting, schedule a meeting in the future, or share your screen.

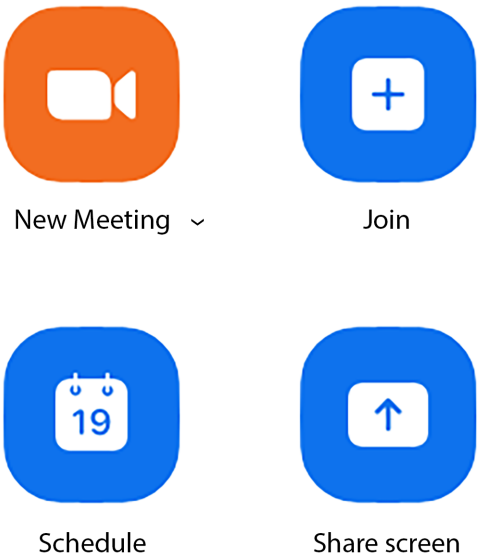

Figure 5.6. Example of a videoconferencing app menu – Zoom

To set up a new meeting, simply click on the "New Meeting" icon and a new meeting automatically opens. A dialogue generally pops up asking you which microphone to use: you will usually want to select your computer audio, so select the "Join With Computer Audio" option.

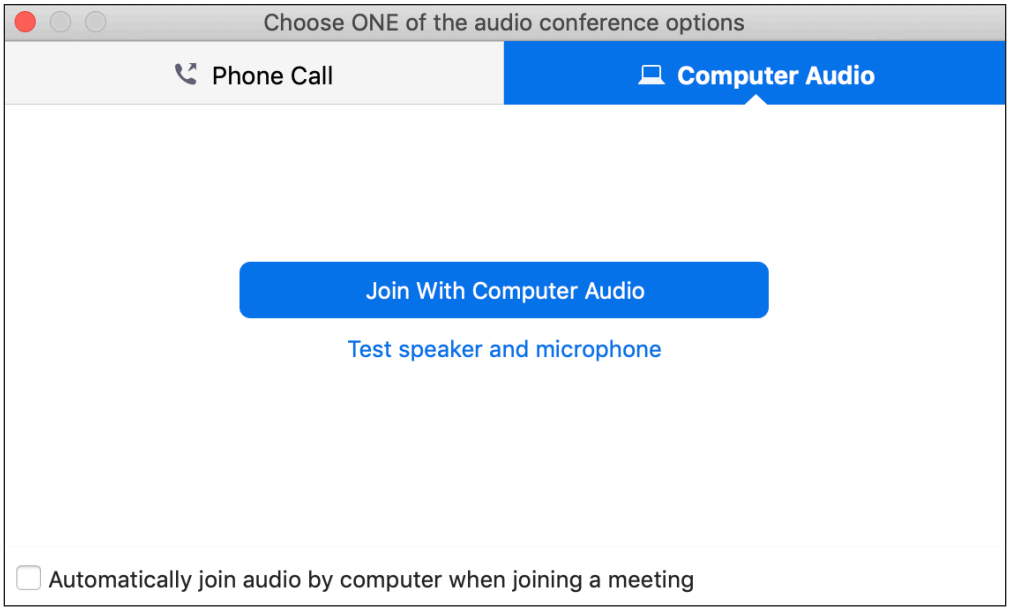

Figure 5.7. Example of a videoconferencing app dialogue box

This is all you have to do. Now, you are in your videoconference and can begin discussing the subject matter of your videoconference.

Learning activity 1. Design an interaction activity

In this activity, you will pair up to develop an activity designed for middle school students to learn more about your chosen modality. You should prepare a set of instructions and resources related to their activity. Then, working with a different partner, take 10 minutes to review the participation activity you designed for your classroom. Remember the criteria that were used on the worksheet:

- **Fit for purpose:** Does the selected activity match the purpose of the event while also recognising the many challenges facing the participant?
- **Visual aids:** Is the activity accompanied by clear and engaging visual aids to prompt participation?

- **Instructions:** Have a clear and concise sequence of steps or directions been written up to introduce the interactive activity to participants.
- **Facilitation skills:** The learning environment provides a welcoming atmosphere where all students including those who are quiet and hesitant are managed with ease as a whole group.
- **Technical:** Is there a relevant backup plan to provide timely support to the participants in case of technical failures?

Share your ideas with your colleagues and give oral feedback on their suggestions.

Learning activity 2. Micro-conference

Take the feedback you have received from your fellow students and continuing to work with your partner, develop your idea into a micro-teaching lesson that you will attempt on a suitable technology.

Once you have designed your lesson, share it with your teacher educator and fellow student teachers.

Critique each other's lessons using the following questions:

- Is it an effective use of conferencing? Why? Or Why not?
- Will it keep your students' attention? If yes, how? If not, how can it be improved?
- If the internet crashes, is there a relevant offline activity prepared?

Once you have gathered feedback, improve your lesson and then try it out with students and reflect on how successfully the lesson worked.

Many schools have now set up international links with other schools across the globe. If you are interested in doing this, talk to your educators about finding links to organisations that connect schools globally.

Review questions

1. Reflect on what you have learnt in the lessons under this unit and assess your understanding of the subject.

	Yes	No	Not sure
I can explain what synchronous conferencing is and why it is important for a teacher (including, but not limited to teaching) in middle school.			
I know how to set up and conduct a group chat, audio call and videoconferencing in Myanmar middle schools and classrooms.			

2. Use your own words to explain to your peers why synchronous conferencing is important in Myanmar middle schools and classrooms. How could you use synchronous conferencing as part of a lesson?
3. List three benefits of using video to support learning and teaching.

Unit Summary

Case scenario 5

The Year 2 ICT student teachers are about to go into schools to do their 2nd 5-week placement. In their 1st 5-week placement in the previous semester, they found it difficult being alone and away from their colleagues. This was a real problem if they had any issues that they were finding difficult to deal with.

U Thaung asks them to think about what they have been studying around the use of synchronous conferencing. Could they use this in some way to help them when they are on placement? Ko Nay suggests that they have a weekly online conference where they can all come together at a certain day and time, to discuss how the week has gone.

The other student teachers think this is a good idea, but Ma Eaindra is worried that it will just be a general chat. 'Why don't we set an agenda in the middle of each week and then discuss those topics in our weekly meeting?' They decide to use a shared document to create an agenda each week which they can then follow. U Thaung also suggests that they bookmark any useful websites they find to share at the meeting. He asks them to review what they have learnt about search engines so that they can find the most relevant and up-to-date sites.

Did you notice that:

- ICT can help in problem-solving by bringing people together remotely.
- The student teachers in the case scenario are using ICT that they have learnt about to improve their pedagogy.

Key messages

By the end of this unit, you will have:

- Learnt to search effectively with a specific and focused search strategy, using accurate search terms;
- Differentiated between Ads and search results;
- Demonstrated an understanding of search engine optimisation (SEO);
- Understood and experienced a MOOC;
- Set up a synchronous group chat, audio call and video call;
- Demonstrated videoconferencing using apps, laptop/desktop software; and
- Designed an effective and engaging activity using synchronous conferencing.

Unit reflection

Think about the following questions and make notes in your journal.

- As a new teacher, how can ICT help you to develop your confidence and skills?
- What benefits are there from discussing professional issues with your colleagues?
- What tools/apps would you use in this scenario?
- How can you transfer the knowledge about ICT into how you effectively use ICT?

Further reading

Since Facebook and Facebook Messenger are widely used in Myanmar, you may want to try out Messenger Rooms. Messenger Rooms have the same functionality as a Zoom or Google Hangouts room for synchronous conferencing, with the difference that Messenger Rooms can be used via Facebook Messenger, which most Myanmar people already have on their phones. This can be more convenient for many instances since many Myanmar people may not know how to download the Zoom or Google Meet apps onto their phones or laptops. You can read about how to set up Messenger Rooms here:

https://www.facebook.com/help/819584731857901

Asynchronous conferencing tools for the Myanmar context can be very useful. For example, you can record messages in Facebook Messenger or Viber and leave them for your friends in a chat to listen to later. You can learn how to do this here:

https://www.facebook.com/help/messenger-app/377884675632666?helpref=popular_topics

https://help.viber.com/en/article/send-videos-for-free-on-viber

The advantage of asynchronous conferencing is that often your friends, work colleagues, or family may be busy doing something else and are not available to do an audio or video call, but you may have something important you want to communicate to them now, or that you are afraid you will be unable to communicate later as you may forget what you want to say or you yourself may be busy. Thus, by recording messages and leaving them with your counterpart, you are able to relay the information you want without disrupting what they are doing, and so they can listen to your recorded messages at their convenience.

Unit 6

ICT in Education

ICT teachers are expected to be able to use ICT appropriately in teaching and learning process. If you have paid attention to all the units in this textbook, you should be familiar with basic ICT devices, tools and resources and begin to combine this knowledge with suitable teaching strategies.

In this unit, you will look at the practical ways in which you can use ICT in planning your lessons and in collaborating with colleagues. You will see how ICT can be incorporated to observe progress, monitor performance, assess for learning and assessment of learning and evaluate a piece of work. You will learn about the different types of offline and online assessment and how to use them most effectively in your practice. You will also explore interactive learning activities in your classroom practice that can be enhanced through the use of ICT. Teachers are required to take responsibility for their own professional development. ICT allows them the opportunity to improve their own teaching practices by learning from other experienced teachers and participating in professional development opportunities.

Expected learning outcomes

By the end of this unit, you will be able to:

- Explain the value of collaboration among teachers using ICT;
- Use relevant ICT tools to collaborate among teachers;
- Demonstrate how to exchange lesson plans, best practices, lessons learnt and resource constraints;
- Establish active teaching and learning facilitated by use of ICT;
- Explain the difference between offline and online assessment systems;
- Describe effective offline assessment tools in education by demonstrating any ICT tools;

- Assess offline assessment tools in education;
- Practise the different types of online assessment;
- Identify many online assessment tools to teachers, including several multiple-choice education learning platforms (e.g. Google Word Coach); and
- Create sample online tests.

Competencies gained

A2.2 Demonstrate understanding of appropriate use of Information and Communication Technology (ICT) in teaching and learning

B1.2 Demonstrate capacity to apply educational technologies and different strategies for teaching and learning

D2.1 Improve own teaching practice through learning from other teachers and professional development opportunities

D3.1 Demonstrate understanding of the importance of inquiry and research-based learning to improve teaching practice

Key terms

Asynchronous collaboration, critical friend, synchronous collaboration

6.1. ICT for Teacher Collaboration

In this sub-unit, you will reflect on the ICT tools you have covered in the earlier units. You will firstly review which tools have a key role to play in helping you with your teaching preparation. You will also think about which tools can be used to collaborate with your colleagues as you plan your teaching.

6.1.1. Using ICT in teaching preparation and collaboration

Expected learning outcomes

By the end of this lesson, you will be able to:

- Explain the value of collaboration among teachers using ICT;
- Use relevant ICT tools to collaborate among teachers; and
- Demonstrate how to exchange lesson plans, best practices, lessons learnt and resource constraints.

Why is collaboration among teachers a good thing?

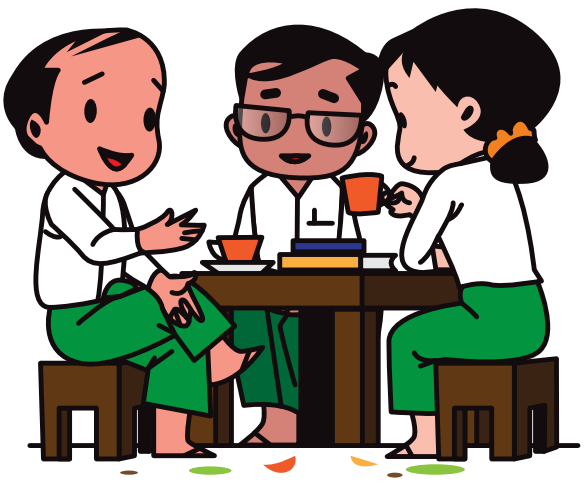

Figure 6.1. Three student teachers in the cafeteria talking together at a table

Working together or alone?

Khin Khin Aye is a student teacher in Yangon. The ICT lecturer has set the class work in developing a series of lesson plans on using Spreadsheets. This is one area of ICT that Kinn Khin Aye does not feel very confident in. Despite spending a lot of time studying the notes in the student teacher textbook, she still has problems and finds it quite boring! She would much prefer to make up different games/activities for her students to do in the classroom.

For two days, Khin Khin Aye worried about this, waking up in the middle of the night feeling anxious. Then on Wednesday, in the student cafeteria, she bumps into Thant Zin Myint and Shein Myint Han. They have been working together on the assignment and have made quite a lot of progress, but they are having problems thinking of fun activities for their students to do. Khin Khin Aye is really good in class with coming up with ideas for pair and group work activities, so they ask her to join them and work together. They will help her in building a series of lesson plans, developing students' understanding of spreadsheets and she will assist them by inventing some fun activities and games to assess informally whether their students have understood the concepts.

Collaborating like this helps Khin Khin Aye to understand some of the basic concepts around Spreadsheets that she has found difficult and her two colleagues start to collect a set of ideas for using in the classroom. Everybody is a winner!

Read the short case study above.

What difficulties does she have related to the task the lecturer has set? What strengths does she possess? How does working with others help?

Learning activity 1. Reflection: Why collaborate?

Now, think about yourself. During the lessons of the past two semesters, you have been asked to work together in pairs or groups many times. Why do you think that is?

What are the advantages of working on a task with other people? What strengths do you have and where is it helpful for you to learn from others?

Take a few moments to think, and then list below as many reasons as you can.

When you are teaching in a school with a full timetable, it can be difficult to find time to talk through ideas face-to-face with your colleagues. Staffrooms can be crowded and noisy places that make sharing ideas quite hard to do. However, by now you have an understanding of the different ICT tools that you can use to communicate both with colleagues in your own school, and perhaps more usefully, with colleagues in different schools.

Learning activity 2. Research: Which tools can be used for collaboration?

At different points in your ICT studies, you have focused on software for communication. Look back, in particular at Sub-units 2.1 and 5.2, and remind yourself of the tools you can use for collaborating with colleagues.

Make a list of the relevant tools here and note down what the advantages are of using each tool. Which ones can be used for **synchronous collaboration** and **asynchronous collaboration**?

Table 6.1. Collaborative tools

Tool for collaborating	Advantages of using this tool	Synchronous/Asynchronous
Collaborative writing Classroom notes sharing Cloud sharing Office Discussion tools Crowdsourcing		

How to share ideas, concerns, lesson plans

As Khin Khin Aye, Thant Zin Myint, Shein Myint Han collaborate on their ICT task, there are times when they need to have a quick live chat during the evening and they all get on their WhatsApp group. Just before submitting his set of plans, Shein Myint Han asks the others to quickly look over a lesson plan that he has just written which he shares via Google Docs.

As with the three student teachers in the case study here, you will also find, no doubt, that there are times when you want to brainstorm some ideas with colleagues as you try to find ways of teaching different concepts and topics in your class. Other times you might want to ask a colleague to act as a **"critical friend"** to look over a lesson plan that you have already designed. You might need some help in accessing useful resources from different reliable sources. All these different demands require the use of different tools if you are to use ICT effectively.

Learning activity 3. Quiz: Using relevant communication tools and software

Are you confident that you can identify and use the most relevant software to help you? Let's start with a short quiz and see if you know your software:

1. What is the best way of sharing a lesson plan with another teacher and getting his/her feedback?
2. You would like to talk online in real time with some of your colleagues to brainstorm some ideas around teaching a particular topic. Which tool would you use?
3. In a month's time, you have to teach a topic that you are worrying about. You think an ongoing discussion with some colleagues would really help you to prepare for this over the next couple of weeks. Which tool would you use for this?
4. You have found a really good YouTube video that you think will be very helpful in teaching next week. How can you share this resource with your colleagues?

Now that you have identified the various relevant tools, it is important to be absolutely confident that you know how to use them. Work in a small group of 3 or 4. Open and use the software that you have identified in questions 1 – 4. If you have any problems or difficulties in using the various tools, ask a fellow student teacher to help you, and then practise by yourself until you feel confident.

Review questions

1. Explain in your own words how ICT tools can help with collaboration.
2. Identify the best tools to:
   a. Brainstorm ideas
   b. Meet with your colleagues online
   c. Share documents
   d. Find useful resources

6.2. ICT in Active Teaching and Learning

Digital technologies promise to introduce many changes into education. Whether in a specific subject or across a whole school, within the formal curriculum and in other non-formal curriculum, digital technologies can change the medium of instruction. Instead of using textbooks or television, it offers e-books and streaming videos. It renews and enhances the instruments available in specific subjects. For example, in geography, GIS (global information systems) or simple uses of Google Maps for map reading can change passive learning into active learning. Middle school students need to be engaged, whether that means discussing what they are learning, relating concepts to past experiences and applying what they have learnt to their daily lives or explaining a concept to a fellow student.

In this sub-unit, you will explore active learning and consider how information and communication technology can be used effectively in the classroom to get student to engage, keep them focused or re-capture their attention. If you can use technology in this manner, then you will maximise the learning opportunities for your students.

6.2.1. Using ICT in a learner-centred classroom

Expected learning outcome

By the end of this lesson, you will be able to:

- Establish active teaching and learning facilitated by use of ICT.

What is active teaching and learning?

The term ‘active learning’ is commonly used when talking about education. Before you start this lesson, think about what this term means to you. Write your definition here:

_____

_____

_____

Some think that a computer or phone will make a lesson active. This may be true for a while. Technology does have novelty value. Students do not remain interested and engaged just because an app is used. When ICT is only “bolted” onto a lesson and not a part of lesson itself, then the work that is associated with the use of ICT will often be superficial.

Computers can prompt students to be active, to think and engage. ICT should be used strategically with the intent to capture, maintain and sustain engagement.

Getting students engaged

Capturing student attention is a necessary pre-condition for effective learning. Here are two common strategies to trigger students’ initial thoughts.

1. **Appeal to their curiosity:** Curiosity is experienced as a result of awareness of a knowledge gap, which creates the motivation to find the answer. Curiosity is developed further when the topic has relevance to a student’s current life experience and this can lead to a desire to know more. Curiosity may be triggered by new technologies, but if the reason for using a medium is to promote thinking, then the focus must not be on the delivery medium but the active use of the technology itself.

2. **Acceptance or belonging:** When students feel a sense of care and connection to other students, they are more likely to become actively involved. In class, a teacher plays an important role in developing this sense of psychological

closeness. Technology can contribute towards presence and belonging when it is used consistently and purposefully. If in the digital learning environment, the students are not sharing a physical location or a common time period, then incorporating communications technologies with a purpose can create an active classroom community. In the absence of any community, students might feel isolated and as if they were teaching themselves.

Ways of maintaining engagement

Using technology to maintaining student engagement in a lesson is very different from using technology to start a lesson. Here are three ideas that will help students to keep their attention focused.

1. **Use a consistent organising structure:** A simple and intuitive design allows students to focus their attention on understanding the information and not on finding their way around an interface. For example, consistent use of mind maps creates an outline for them to follow. Long pages of content can be broken down into logical headings and subheadings.

2. **Clear, but friendly, instructions and guidelines:** There is a tendency among teachers to communicate important information strictly. This authoritarian tone does not always work online and might provoke anxiety or cause withdrawal. An appeal to students' logic, emotions or character offers another way to communicate.

3. **Challenging and authentic tasks:** Learning requires the combination of application and effort to set tasks. If assigned tasks are to be engaging and lead to new understanding and insights, they need to be structured in a manner that allows the students to experience a sense of achievement. It is important to consider whether mastering the "tasks" and/or the "tool" is the focus of the activity. Cumbersome and nonintuitive user interfaces can restrict the student's satisfaction in completing a challenging task. If the focus is on learning a particular tool and not explaining a concept, it could lead to misplaced effort.

Re-engaging students

In most lessons, a proportion of students will delay or fail to engage during the time of a lesson. Here are two strategies for using technology to re-engage these students.

1. **Monitoring attention:** Technology can easily reduce personal contact moments within a class. Students, when bored, do not always pay attention to the person and focus on the device. Recovering the attention of these students is possible with a specific call to action. For example, a teacher can use a student response app to ask them to complete an online poll.

2. **Personal contact:** The most effective strategy for re-engaging students is personal contact with a teacher. Such contact works best when the lecturer works with the student to offer clarity with their understanding or provide help and support for a specific issue that might have caused the student to disengage. This personal contact need not be synchronous. A teacher might send a message to the student after the class, enquiring about their lost attention or failure to engage.

Learning activity 1. Discussion: Learner-centred online activities

Online learning needs to be engaging and active. Find an online resource and evaluate it using the following questions:

- Name of the resource
- Website address of the resource
- Introduction:
  - Does the introduction draw students in by relating to the students' interests?
  - Are students led into a familiar scenario using audio or video?
  - Is a compelling question associated with a captivating image?
- Task or activity:
  - Is it very clear to the student what they will have accomplished after completing the task?
  - Is the task that has been set doable and engaging?
- Process: Is every step in the process section clearly stated so that the students will understand what they are to do?
  - Are the activities within the process clearly related?

- Relevance, quality and quantity of the resources
  - Are the resources of value to the students?
  - Do the resources hyperlink to the correct websites?
  - Is the layout and design appropriate for the students?
- Clarity of assessment criteria
  - Does the assessment clearly communicate to the students what is going to be assessed?
  - Does a rubric provide a list of criteria for appropriate levels of performance?
  - Does the rubric match the learning outcomes?

When technology is integrated successfully into lessons, it can make learning very enjoyable and encourage your students to participate actively in the lesson. It can help both you and your students to develop 21st century skills that are essential for the contemporary world such as critical thinking, collaboration and communication skills.

Over the past two years, you have worked with a range of ICT and have become confident in using software including word processing, spreadsheets, presentation software as well as a broad range of communication tools.

Learning activity 2. Review: Using ICT in the classroom

In the table below, make a list of the various software that you are now familiar with. As with the example given, think about what the software/tool does and then come up with an engaging classroom activity that you can use with your students to begin with and gain their attention, to keep them focused or to recapture their attention.

Table 6.2. Software you are familiar with

Software	What it is used for	Example task
Spreadsheet	Compiling easily analysed information	A class survey

When you have shared your ideas with your fellow student teachers, make sure that you keep a record of all the different ways you as a class have identified in which you can use ICT in the classroom. This will be a very useful resource for you to use as you plan your lessons.

Learning activity 3. Active learning: Lesson plans with integrated ICT

The final task for you in this lesson is to write a series of lesson plans around a topic of your choice (from the curriculum) in which you integrate a range of ICT. However, it is important that the tasks you include are meaningful and authentic. This means that they require an element of ICT in order to complete them successfully.

For example, you might want your students to research a specific topic. Obviously, they can find some information from books, but the most up-to-date resources are frequently online. In order to do this, they need to use a search engine, but if you remember back to Unit 5, there are key skills that need to be employed in order to get the most out of a search. As well as asking them to use a search engine, you also need to teach them how to use a search engine most effectively. This element needs to be included in your lesson plan.

Review questions

1. Describe active learning.
2. Engaging student attention is necessary for effective learning. Describe two common strategies that help to achieve this.
3. Online learning and assessment need to be engaging and active. List three criteria you should consider when researching an online learning resource.

6.3. ICT in Assessment

In this sub-unit, you will be able to explain the difference between offline and online assessment systems; understand effective offline assessment tools in education through use and demonstration of ICT tools; and assess offline assessment tools in education. You will learn the different types of online assessment, be able to search and identify online assessment tools for teachers and create sample online tests.

6.3.1. Offline assessment

Expected learning outcomes

By the end of this lesson, you will be able to:

- Explain the difference between offline and online assessment systems;
- Describe effective offline assessment tools in education by demonstrating any ICT tools; and
- Assess offline assessment tools in education.

To make sense of computer-based testing, whether it be offline and online assessments, we must first understand the two main functions of assessment:

a. Assessment that is used to assist and support students during their learning process (formative assessment)
b. To measure student's performance at the end of year or semester (summative assessment)

E-assessment is the use of ICT to create, distribute and provide feedback on assessments. Also known as Computer Based Assessment (CBA) or Computer Based Testing (CBT), this approach involves the use of a computer to create an assessment, deliver a digital version of an assessment and provide feedback or evidence to both students and assessors as to the extent of knowledge, skills, or experience in the

matter that is assessed. CBT has been available for decades, but up until recently, CBT usually served the ICT sector directly. But, it has also been used in international study centres or those educational organisations which offer remote study courses.

As a world-wide trend, we are beginning to see schools, colleges, training programmes and employers increasingly requiring exam candidates to sit in front of a computing device, view questions on a screen and submit answers using a keyboard or a mouse. While you might not have experienced CBT in a Myanmar classroom, with a computer, students can access digital questions, answer them and receive immediate feedback and more accurate overall scores. It is possible that in the future, instead of writing the traditional end of semester or year paper and pencil exams, the Ministry of Education might decide to use an e-assessment system to run national exams.

The advantages of such a national e-assessment system include:

- Flexibility: CBT can be offered on demand, whether the exam be released within a certain time period (a day or week) or maybe the exam be available continuously.
- Security: CBT can be used to control exposure. Software can be programmed to limit the number of items that are delivered and the time within which these items are visible or live. CBT data can also be encrypted (both questions and answers) when transferred from and to exam centres.
- Variety of question types and sequences: CBT offers standard question types, such as multiple choice, true or false and unique question types, such as hotspots, integrated audio and video, and drag and drop matching. These items can be presented sequentially, randomly or in an adaptive manner, depending on answers to prior questions.
- Data rich results: Apart from capturing the answers to questions, CBT can also have different techniques to improve the assessment. For example, CBT systems use keystroke capture to collect an array of information that includes start, end, break periods and time spent on each item.

Designing questions on authoring software

Converting paper based and pencil tests into CBT is not difficult. And many times, existing test content is migrated onto test publishing software.

Authoring software usually allows an assessor to:

- Make a choice between different types of exercise (multiple choice, true or false etc.);
- Select a format and presentation style (a timed quiz, one question at a time); and
- Package test questions in a manner that can be delivered or exported to assessment delivery services.

Different form of authoring software is available, either commercially or in an open source format. Selecting an offline assessment package will depend on cost, availability, interoperability with other systems and the examiners requirements. Such a package should be able to:

- Create edit and delete test questions, graphics and exhibits;
- Offer support to a range of different question types (multiple choice, true or false, hot spots, drag and drop);
- Integrate multimedia or simulations;
- Report a detailed score;
- Control the nature and timing of scoring feedback;
- Import questions to an internal question bank or exportable format; and
- Export questions into a commonly accepted format.

These features allow an educator to streamline the assessment setting procedure. When evaluating authoring software, there is a tendency to focus on what the technology enables and not necessarily the needs of the curriculum, learning outcomes and context.

Forms, fields and question types

An online form is an electronic page that allows a user to enter data. Fields are the building blocks of a form. They may be text fields, checkboxes or radio buttons. These fields are used to collect the information that is entered into a form and then submitted. These fields can contain either open-ended or closed types of questions, depending on the information that needs to be collected.

Fields that support open-ended questions:

- Single-line text field: Enter characters into a standard single line input area.
- Paragraph text field: Enter paragraph of characters into a multiple-line input area

Fields that support closed-ended questions:

- A drop-down list: A selected item is always visible and the others are visible when users click on it and a drop-down menu allows users to choose an item from the list.
- The radio field allows users to choose only one item from a list of options. Radio buttons are usually used so that only one answer can be selected.
- The checkboxes field allows users to choose any number of items from a list of options. Checkboxes are usually selected so that many options can be used.

Offline assessments can be used to create an electronic copy of a paper-based assessment. Question types that are found in paper-based assessments then are turned into electronic format with forms, fields and buttons. There are, however, question types that cannot be used in a paper-based classroom. Both options are listed below.

Multiple-choice question: The student has to choose one answer from a list of four possible answers. Students get feedback immediately if their choice is correct. But they have a 25% chance of guessing the right answer.

Multiple response question: The student has to select more than one answer from a list of possible answers. Students cannot move forward until they have the correct combination.

Alternative response question: The student has to choose between just two items. Students have a 50% chance of guessing the correct answer.

Ranking question: The student relates items in one column to the items in another. Used to test the knowledge of sequences, order of events, and level of gradation. These questions can be difficult to assess. If any item in the sequence is incorrect, then the entire answer is wrong.

Matching question: The student sees a set of statements and a set of responses. They have to decide which response from the second list corresponds or matches each statement in the first list. Initially, this assessment can be difficult to make matching pairs. But as further items are matched, the pairing process becomes easier.

Cloze question: The students are given a statement and key words are omitted. Students look through a word list and then complete the statement by filling in the word(s). These cloze texts cannot be too long as they will involve scrolling.

Assertion/reason question: The student answers questions that combine different question types. Students are given a MCQ where they select the correct assertion or statement, and then offer an explanation or reason for selecting the assertion or statement. These questions reduce the amount of guesswork and require higher order thinking.

Drag and drop question: The student is given a situation where they need to combine two separate objects together to create a coherent explanation. For example, a column of definitions can be dragged into designated spaces in a diagram.

Hotspot question: The student is presented with an uploaded image and a question. Students need to use their mouse to click on the image and identify the specific area in that image.

Extended matching questions (EMQ) are different from single best answer multiple-choice questions (MCQ). An EMQ consists of:

- a theme;
- a list of possible options;
- a lead-in statement; and
- a problem, or vignette, also called the stem.

The students work through the sequence of these steps to complete the question.

Running an offline assessment

When the Myanmar Ministry of Education (MoE) runs a standardised paper-based exam across the country, the following usually occurs:

Before the exam, the candidate(s) is informed about an exam at certain time at a venue. On the exam day, the candidate arrives with all other candidates at the exam venue at a certain time. Around the designated start, the supervisor hands out question papers, checks the clock, verifies the identity of the candidates by checking their IDs, and then invigilates during the marking period, to ensure that malpractices (such as impersonation and cheating) are avoided. At the end of the allocated time, exam scripts are collected by the invigilator. After the exam, scripts are returned to a centralised venue, passed onto the markers, moderated results totalled and adjusted, and then declaring the results at the end.

The drawbacks about using ICT in assessment

There is greater interest in the use of technology when conducting assessment. This unit has focused on many of the reasons why offline assessment might be a good idea. But, there are also legitimate objections to the use of ICT in assessment.

The kind of skills that are easiest to teach and to test are also the skills that are easiest to digitise, automate and outsource. When using computer-based assessments, it is helpful to think about what you are assessing.

- Process vs product
- Factual knowledge vs use of knowledge
- Individual ability vs teamwork
- Single right answer vs multiple outcomes
- Deep learning vs surface learning

If CBT is rolled out and used extensively, the system design could influence the way teachers teach. For example, instead of reading books, students read passages on a computer or instead of personal one-to-one sessions with individual students, and a large group of students are put behind computers in a computer lab. E-assessment in offline mode assessment is not suitable for assessing the following skills:

- Oral skills
- Presentation skills
- Group and interpersonal skills
- Complex writing skills

Other possible challenges that may affect the results are the computer literacy of candidates, access to appropriate hardware, possibilities for dishonesty and the complexity of such a system.

Conclusion

Educational assessment is a core part of the teaching and learning process. Assessment is often used at the end of a semester or year to judge progression, to differentiate between students, to enable a final classification and to provide quality assurance checks. ICT can assist with this kind of assessment. A computer-based assessment, as opposed to paper-based assessment, offers considerable potential. Student's work can be marked objectively, dispassionately and consistently. Feedback is instantaneous, consistent and repeatable. But there are also substantial challenges in the use of e-assessment and an enormous amount of trust must be placed in the system and the students' proficiency to use the technology.

Learning activity 1. Matching exercise: Fields and questions types

In this activity, look through the two columns and match the field with a suitable question type.

Field	Question type
Checkbox field	Assertion and reason question
Single-line text field	Cloze question
Paragraph text field	Extended matching question
Radio field	Multiple-choice question
Drop-down list	Ranking question

Learning activity 2. Active learning: A good e-assessment experience

A good e-assessment experience requires that middle school students are prepared for the exam software, as well as being confident with computing devices. Teachers should make sure that their middle school students, who are about to use a computer for assessment, are able to:

- Type in an answer
- Move around a page to locate and select information
- Navigate around a computer

Middle school students who write offline exams should be adequately prepared. Clear communication with exam candidates is crucial, otherwise anxiety will grow and the students' test taking performance affected. Below is a list of exam instructions for these students, but it is all in the wrong order. In pairs, look at all the instructions for students. Then, discuss the correct sequence with your partner and re-arrange the instructions into:

- Before the exam
- On the exam day
- After the exam

Exam instructions for students

- Arrive half an hour before the exam to set up.
- Be familiar with the process for receiving or retrieving your results.
- Bring an emergency power bank.
- Complete the orientation activity to become familiar with the environment.
- Know who to contact if you require assistance with a review or re-write.
- Log in (and ask for assistance if necessary).
- Make sure that your BYOD device is fully charged.
- Plug in your power bank to charge if necessary.
- Practise typing skills and, if necessary, enabling and using a language keyboard.
- Prepare themselves by completing past exam papers on the e-assessment platform.
- Remember to include pens in case you need to take notes.

Learning activity 3. Pair work: Bigger issues

Thus far, you will have identified a few differences between traditional pen and paper tests and e-assessment systems. In pairs, view the following common issues when writing paper-based exams, and then discuss and describe if and how e-assessment tools (whether online or offline) can address these problems.

- Leaked papers prior to the exam
- Printing, storage and distribution costs
- Interruption due to power failures
- Incorrect instructions delivered by exam supervisor
- Rote learning by students
- Absence from the exam due to illness
- Delay in the release of results
- You may think of other issues as you discuss the matter

Assessment

Student teachers need to become familiar with forms, fields and question types. We would like you to access an assessment authoring package and to create a ten-question assessment using different question types. Before you begin, you should select a purpose behind the offline assessment. Below are ten suggested purposes:

1. **Check for prior knowledge:** Set a diagnostic test at the beginning of the semester with multiple-choice questions to find out how much they know before they begin a new section.
2. **Check for understanding:** Set a true or false test with automatically answered question to allow the students to see where they are in their understanding.
3. **Class management and administrative information:** Gather important class information using single-line or paragraph fields to collect information such as date of birth, parents' names and contact numbers.
4. **Parental input:** Obtain insight from parents about their children's interests with a rating scale.
5. **Personal preferences:** Create a class poll that allows children to select a range of listed options and make known all their preferences.

6. **Student satisfaction survey:** During the semester, offer students the opportunity to give anonymous feedback to the teacher using drop-down menus.
7. **Collect challenges stories:** Ask students to review a list of challenges on a variety of topics (e.g. study habits, time management, internet access at home) that are specifically faced by students.
8. **Create a checklist:** List the important aspects of a task for students to go through.
9. **Self-assessment:** Provide a series of statements for students to rate according to a scale.
10. **Peer involvement:** Set up a peer review exercise and ask students to review fellow.

Then, after you have selected your purpose, think about the questions you will include in the assessment. Please ensure that you have at least one multiple-choice question in the test. Then, think about another four questions and select additional question types that you will use.

6.3.2. Online assessment

Expected learning outcomes

By the end of this lesson, you will be able to:

- Practise the different types of online assessment;
- Identify many online assessment tools to teachers, including several multiple-choice education learning platforms (e.g. Google Word Coach); and
- Create sample online tests.

Traditional assessment methods can be reproduced, augmented or transformed online:

- With a suitable online writing tutorial, an essay can be broken down into component parts and submitted separately: an introduction, an annotated bibliography, a draft or outline, then there is a peer review, then a final version of the paper.
- A link to a topic-related video is useful to both students and their teacher and can be accompanied by a mobile friendly quiz that can be done at home on a mobile phone. The message and link can remind the students about the homework and the quiz results can assist a teacher to see if the video has been read beforehand.
- An interactive problem can be posted on a virtual reality headset that can be completed at the beginning of a class. It can be used to diagnose whether a concept that was taught last year, has been remembered and still understood.

Currently, as a pre-service teacher and previously, as a student, you have encountered a variety of methods to determine whether students have understood what has been taught. These methods might include self-assessment, peer-assessment, time constrained individual assessments (like test or exams) or writing assignments (projects, essays reports).

Technology can make it possible to facilitate these methods at scale. It can monitor progress. It makes it possible to streamline or improve current inefficient assessment methods. Technology also can assess skills and processes that were difficult to measure or time consuming to assess. Technology brings a range of new options. For example:

- Dialogue and communication: Chat, discussion forums, blog and wikis
- Immediacy: Online tests or student response systems that offer rapid feedback
- Speed and ease of processing: Automatically marked assessments that offer instant feedback
- Self-regulated learning, e-portfolios, MOOCs, digital badges

But before we get too excited about the wide variety of methods of assessment that are possible with technology, we must first draw the distinction between purpose of assessment and method of assessment.

Broadly speaking, there are two purposes for assessment: summative and formative.

Assessment *of* learning: The primary purpose of this kind of assessment is to find a measure that "sums up" a student's learning. Formative assessment is a final assessment of a student's achievement, usually leading to a formal acknowledgement of progress or a certification of an ability. This kind of e-assessment is generally undertaken at the end of a topic and is used to make a judgment about the student's overall level of achievement.

Assessment *for* learning: Testing takes a formative or developmental approach. Its purpose is to estimate a student's current level of achievements so that the student can see their current strengths and weaknesses and enhance their final results. This kind of online assessment takes place during the topic that is being covered (rather than at the end – summative, or beginning – diagnostic), if it is used for marks, then the results do not contribute towards the final grade and students are often encouraged to complete this assessment repeatedly.

If technology is combined with formative online assessment, then it:

- Helps a student to take responsibility for their own learning;
- Provides an alternative way to communicate clear, specific learning outcomes;
- Allows a teacher to determine the classes ability to apply what has been taught;
- Identifies the student's current levels of knowledge;
- Prompts teachers to think about the necessary steps they can take to help students;
- Encourages students to self-monitor progress;
- Offers opportunities to communicate specific criteria that will be used later in a high-stakes setting;
- Allows for non-evaluative or non-judgmental feedback that is specific, timely and related to outcomes;
- Provides opportunities for the student to revise and improve their work and deepen understandings; and
- Promotes reflection among students on their work.[22]

22 Adapted from the Handbook of Formative Assessment. Andrade, H., & Cizek, G. J. (Eds.). (2010).

Table 6.3. Benefits and drawbacks of using ICT in formative assessment

Immediacy – If students see their results immediately, their interest is piqued. Teachers can use these results to respond and take action.	Impersonality – Students feel that the "human touch" is missing and may become discouraged if they encounter frequent poor results.
Location and time independent – Teachers can use technology and allow students to complete the formative assessment from class or at home. The assessment can also be conducted any times.	Cheating – IT is easier to impersonate another student or bring in additional aids to the testing situation.
Automatic score recording –The results can be logged automatically and optionally made immediately visible for student access. Very little work required by the teacher.	Technology problems – Technical problems (e.g. failed hardware, network line outages etc.) may need to be allowed for and participants should be encouraged to document these problems rather than just complain, "It doesn't work."
Timeliness – If the formative assessment is used as a learning check, then the timing can be set up so that the assessment is available at a specific time or date.	Time commitment – Although formative assessments can decrease the marking time, building the assessments ahead of class does take time.
Improved access – Students can do the assessment, in class, on the schoolgrounds and from home.	Students require some technology skills – Students need to have at least baseline competencies in using the technologies.

Technical issues

Online assessment has drawbacks, especially when technology fails to work as expected. If technology is regularly used in a classroom and it fails frequently, then time is wasted. If technology is being used for a high-stakes "assessment of learning" test and it fails for whatever reason, then students might be penalised for a problem that is beyond their control.

A teacher can take steps to limit the problems that technology might introduce. A helpful approach is to use a "trial run" early in the year. The trial run should combine the online assessment instruments with a set of assessment instructions.

The trial runs offer students three opportunities:

1. To understand the assessment procedure
2. To discover if and how they might access technical support
3. To provide feedback about their experience to the lecturer

A trial run offers the teacher three opportunities:

1. To test the link between the assessment and the tool gathering the information
2. To see if they can accommodate particular student's special needs
3. To rectify problems with sufficient time available in advance

The following actions that can assist students to complete assessments (whether on a trial run or for real). These instructions must be re-enforced:

- Read the instructions: You will be clear about the steps to follow when completing the assessment.
- Update your diary: Know when the online assessment will be used, ahead of time and ensure you have access to the necessary technology.
- Read the manual: You will be familiar with the assessment tools prior to the assessments.
- Be connected: You will have access to stable internet and access to data or free Wi-Fi as a backup.

Experience is a hard teacher. If you are going to use online assessments, then it is recommended that:

- A web address that links the tool with technical support should be included in the instructions. This will allow students to access instructions and assistance on how to use the tools.
- If online assessment is used for high-stakes assessment, the work should be submitted from a computer / laptop (and not a mobile phone).
- If videos are included in an assessment, the video must be uploaded to a central repository (such as YouTube as an unlisted video). Videos can then be embedded within the assessment tool.

Automatically marked online questions are very popular among teachers since they do not take too much time to mark. These auto-marked questions can take a variety of forms:

- Multiple-choice questions: The student has to choose one answer from a list of possible answers.
- Multiple response questions: The student has to select more than one answer from a list of possible answers.
- Alternative response questions: The student has to choose between just two items. Students have a 50% chance of guessing the correct answer.
- Ranking questions: The student relates items in one column to another. Used to test the knowledge of sequences, order of events and level of gradation.

- Matching questions: The student sees a set of statements and a set of responses. They have to decide which response from the second list corresponds or matches each statement in the first list.
- Completion questions: The student is given a statement and key words are omitted. Students have to complete the statement by filling in the word(s).
- Assertion and reason questions: These questions combine elements of multiple-choice and true/false question types. Students have to decide whether the assertion, statement and explanation are true and if true, whether the explanation is a valid reason for the statement.

There are also a range of different services available to host auto-marking quizzes. Some of the apps and platforms are:

Formative – https://goformative.com/

Formative is a web- and app-based interactive student response and assessment tool. It allows teachers to create questions using a variety of question types (multiple-choice, true/false, short answer, etc.), where students can have a chance to show their understanding via writing, drawing, audio, etc. Teachers can watch as students answer and see their students' learning processes in real time. This allows for just-in-time, individualised feedback and the teacher can guide student learning before students are too far into a concept.

Quizlet Live – https://quizlet.com/

Quizlet sets out to help students practise and master the content that they are learning. It can be used individually or as a class, in a game show-style competition. The platform lets a teacher search and locate engaging and customisable activities or create their own and then share a "set" with students. Quizlet live makes the platform different from other formative assessment software. Students use Quizlet live to play a game where all participants have to communicate and collaborate with each other to figure out which one of them has the correct answer.

NearPod – https://nearpod.com/

Nearpod is intended to support student learning. This tool allows students the opportunity to interact and get feedback while working directly on the page. Students move either through teacher-directed or self-directed interactive presentations that contain quizzes, polls, videos, images, drawing boards etc. The teacher can move the class through the presentation. Or, allow students to work through the content at their own pace. When students control the flow of the lesson, there are opportunities for differentiation. Teachers can then view which students have completed the activity and which students are still working. Teachers can also view exactly what each student has written and can then showcase student work by selecting their screen to share with the rest of the class.

Kahoot – https://kahoot.com/

Kahoot is a student response tool that allows you to invite full participation from a class. It offers teachers the opportunity to either create their own quiz, poll or survey or select from the many free options available and remix and customise. Quiz questions, with the answer options, are projected onto a screen while students submit their answers using a mobile device. The platform offers points or rankings to students for correctly answering questions. Suspenseful music and instant scoreboard make Kahoot a way to liven up a lesson.

Socrative – https://socrative.com/

Socrative is a student response tool. Teachers can use it to receive real time feedback in response to quiz type questions. Students access Socrative via a room code and students are requested to anonymously complete multiple-choice, True/False or open-ended questions. Students' answers to the given options are visible on screen. Socrative generates Excel reports with data on overall class performance. Socrative also offers a team option entitled "Space Race". Individual students or teams compete with each other by answering a series of multiple-choice questions. As each student or team answer a question correctly, their rocket moves one step further in the race. The student or team that has answered the most questions correctly, wins the space race.

Plickers – https://get.plickers.com/

Plickers is a student response tool that lets the teacher collect rapid, but anonymous feedback from students, but without having a device. The teacher projects a question on the board and offers the class a choice of answers. Students have paper cards that contain unique QR codes that can be rotated 90 degrees to indicate their answers (one side up indicates A; another side up indicates B, etc.). The teacher uses his or her mobile device to scan the codes and the Plickers app records their responses and totals the scores up.

As mentioned in earlier lessons, there are also Myanmar language online assessment tools. Please see them below:

Table 6.4. Myanmar language online assessment tools

App / Chatbot	URL	QR code	Description
Lann Pya	https://play.google.com/store/apps/details?id=com.koekoetech.myjustice&hl=en_US		Offers multiple-choice quizzes in Myanmar languages for middle school students to learn about Myanmar laws, civics and government
maymay	https://play.google.com/store/apps/details?id=com.koekoe.mayonline.myan.app&hl=en_US		Offers multiple-choice quizzes in Myanmar languages on motherhood for maternal and child health
Pyo Pyo May	https://play.google.com/store/apps/details?id=com.keoeoetech.pyopyomay&hl=en_US		Offers multiple-choice quizzes in Myanmar languages on education for girls
Survey Monkey	https://www.surveymonkey.com/		Can create surveys and tests in Myanmar language online and offline

Learning activity 1. Active learning: Creating a formative assessment quiz

Working together, use the Survey Monkey software to create a multiple-choice test using Myanmar language for your students. Navigate to the Survey Monkey website and log in with your account; make sure you are using the Basic (free) account. See below the steps to create a quiz on Survey Monkey:[23]

Add a quiz question

You can make any survey into a quiz by adding at least one quiz question to your survey. When you create a new survey from scratch and choose the quiz category, any new questions you add will have scoring turned on by default.

To add a quiz question:

- Create a question, add the question text and answer choices you need.
- Select 'score this question (enable quiz mode)' — this makes it into a quiz question with scoring.
- Define which answers are correct by clicking the empty checkmark icon to the left of an answer choice. The checkmark icon fills in to indicate that it is the correct answer. You can choose more than one correct answer.
- Adjust the point value of any correct answer choice by clicking the up and down arrows next to the point value.
- Click Save.

If your quiz questions use checkboxes to allow more than one answer, you should require people to select a specific number of answer choices. Otherwise, since points are not deducted for incorrect answers, even if someone selects a wrong answer in addition to the correct ones, they would still get the full points for the question — which might lead to a confusing final score. For example, if there are two correct answers to the question, you should require that respondents select exactly two choices.

23 Survey Monkey: https://help.surveymonkey.com/articles/en_US/kb/Quizzes#Create

Assigning points

You can assign points to answer choices. The typical point value for a correct answer is 1, but you can assign more than 1 point to any answer choice. It is not possible to assign negative points to an answer choice. The points respondents earn for each question are added up into a total score when they finish the quiz.

Maximum score

When you are editing a quiz question, you can see the maximum number of points someone can earn for that question:

- For questions where only one answer is allowed, the maximum score is equal to the highest point value assigned to an answer choice in the question.
- For multiple-choice questions using checkboxes (where respondents can choose more than one answer), the maximum score is equal to the total point value across all answer choices (regardless of whether you require a limit or range of answer choices).

When someone gets the maximum score for a question, the question is considered correct in the question summary and in their individual response in the results.

Partial credit

You can set up your quiz so that respondents can get partial credit for choosing certain answers. For example, you can assign 2 points to the best answer and 1 point to the answer choice you want to give partial credit for. If the respondent gets partial credit (not the maximum score possible for the question), their individual response will show that they got the question “partially correct”.

Showing results at the end of the quiz

You can choose whether you want to show someone their score and a summary of how they did on each quiz question, when they finish the quiz. The quiz results page only includes quiz questions — questions without scoring are not included. The quiz results page only shows the respondent’s own score. No one can see other people’s scores.

To display quiz results to respondents at the end of a quiz:

- In the left sidebar, click ‘Options’.
- Make sure ‘Quiz mode’ is enabled.
- Select ‘Display quiz ‘results.
- (Optional) If you do not want respondents to see the correct answers to the questions they got wrong, deselect ‘Show correct answers to incorrect responses’.

Overall quiz summary

The quiz summary at the top of the ‘Analyse results’ page shows you how everyone performed on the quiz overall.

Learning activity 2. Homework assignment: Formative assessment

What kind of high-stakes diagnostic or formative assessment do you want to include in your lesson?

- An auto-marked prior knowledge online assessment
- A diagnostic e-assessment halfway through the topic to identify misconceptions
- Anonymous self-assessment activity that is used by the individual students for their own reflection
- Peer assessment task where students comment on fellow student’s work
- A formative e-assessment with no marks to be used during a module/ unit
- An auto-marked formative e-assessment that can be attempted repeatedly during a module/unit
- An e-assessment that has a self-evaluation component

Use one of the apps mentioned to accomplish the above.

Assessment

Ask a peer to complete the assessment that you have set. Use the following criteria to mark a peer online assessment.

Table 6.5. Rubric for peer assessment

Time management	Students' efforts are valued and the time required to complete the assessment is stated and a date or time by which the assessment must be attempted has been set.	It is assumed that the student knows how long the assessment will take and it always closes at the same time.	There is no attempt to assist the student to manage their time commitments.
Instructions to make the procedure clear	Be clear about steps for students to follow when completing the online assessment and make sure they are available.	Instructions are given but not broken down into steps.	There are no instructions.
Connectivity	You have included a mechanism to check that each student has access to a device with stable internet or data or free Wi-Fi.	You have assumed that students have their own devices and have access to the internet, but you cannot verify this.	You have no idea about access or ownership.
Technical support	Students have been made familiar with the assessment tools in class prior to the assessments.	Students have been given a link to the manual associated with the assessment tool.	It is assumed that the student will know how to use the technology concerned.
Feedback	Students are specifically asked to provide feedback about the suitability of the formative assessment tool.	There is a question in the tool that allows students to give their feedback about the tool.	Feedback is unwelcome.

Update your diary: Know when the online assessment will be used ahead of time and ensure you have access to the necessary technology.

Be connected: Experience is a hard teacher, if you are going to use online assessments, then it is recommended that:

- A web address that links the tool with technical support should be included in the instructions. This will allow students to access instructions and assistance on how to use the tools.
- If online assessment is used for high-stakes assessment, the work should be submitted from a computer/laptop (and not a mobile phone).
- If videos are included in an assessment, the video must be uploaded to a central repository (such as YouTube as an unlisted video). Videos can then be embedded within the assessment tool.

Review questions

1. Teachers can use technology to facilitate and monitor assessment. There are a variety of methods used to determine whether students have understood what has been taught. List three.
2. What is formative assessment?
3. List two advantages and two drawbacks of using ICT in formative assessment.
4. You can create quiz questions in a variety of forms. Name four.

Unit Summary

Case scenario 6

It is the end of the semester. The student teachers have returned to the Education Degree College from their practicum in schools. Their teacher educator, U Thaung, asks them to reflect on their practicum; what is the main thing they have taken from it?

Ko Nay has been thinking about how to help middle school students understand and apply their knowledge and skills. 'It made me really determined to find ways to move away from simply transmitting information and rote learning!' he says. 'With my phone and a few fun apps, I held a Friday quiz where we went over the week's work and had fun. The students really looked forward to the quiz and it also gave me a good idea of what they had understood and where the problems were.'

Ma Eaindra spoke about developing her middle school students' learner independence by showing them how to use search engines effectively. 'I gave them a handout with the key points on about how to identify a good reliable source', she explained. 'Then, I put them in groups of four and set them a topic to research. It really helped them understand how search engines work, and they used books as well as the internet as we didn't have enough computers for all the groups, so they had to take turns. I had to answer some really tricky questions which helped me become better at teaching ICT!'

Did you notice that:

- Ko Nay focused on developing his middle school students' knowledge and skills, so that they can use and apply their knowledge with understanding and not just memorise answers.

- In the example from Ma Eaindra, computers had to be shared between groups of students. When the computers were being used by some groups, others used books. It is important to be flexible!

Key messages

By the end of this unit, you should have:

- Understood the value of collaboration among teachers using ICT;
- Practised using relevant ICT tools to collaborate with your colleagues;
- Established active teaching and learning through the use of ICT;
- Explained the difference between offline and online assessment systems;
- Assessed online and offline assessment tools in education; and
- Created sample online tests.

Unit reflection

Think about the following questions and make notes in your journal.

1. Reflect on your own practicum. What is the key experience that you have had? How did it make you feel?
2. In the first case scenario, U Thaung talked about the three aspects of being an ICT teacher:
   - To learn about ICT
   - To learn how to use ICT in middle school
   - To use ICT to become a better teacher

Write a short paragraph on each of these three aspects, reflecting on how you have developed as an ICT teacher throughout the two semesters.

Further reading

Here is Salman Khan, the creator of Khan Academy, talking about effective use of ICT in the classroom: https://www.ted.com/talks/sal_khan_let_s_use_video_to_reinvent_education

Glossary

Terms	Elaborations
Asynchronous collaboration	A type of collaboration where the exchange of ideas, information and interaction between users occurs on a schedule basis rather than connecting in real time
Asynchronous conferencing	A form of computer-mediated communication, collaboration and learning in which there is a delay in interactions between contributors. Examples can include e-mail, online forums and social networking sites.
Critical friend	A trusted person who asks provocative questions, provides data to be examined from another lens and offers critiques of a person's work as a friend
Digital citizen	A person with the skills and knowledge to effectively use digital technologies in a positive way to participate in society, communicate with others, and create and consume digital content
Digital footprint	The total set of data that is left behind by a person using a digital system
Digital identity	Body of online information that an individual discloses, shares and curates
Digital media literacy	A new and shifting set of skills and abilities that is required to navigate a digital culture. A new literacy that goes beyond reading, writing, and numeracy and includes the ability to examine, comprehend messages and credibility of digital work
Digital resilience	Ability to cope with setbacks and to bounce back from something difficult
Echo chamber	A term used to describe an environment (often online or on social media) where all beliefs and opinions are amplified and reinforced, but never challenged
Facebook	A social networking site that makes it easy for you to connect and share with family and friends online
Firefox	A cross-platform web browser created and maintained by Mozilla
Information literacy	Focuses on the purposes of engaging with information and the process of becoming informed. It is associated with the concepts of learning to learn and making decisions through its emphasis on defining needs and problems, relevant information and using it critically and responsibly (ethically).
Instagram	A free photo and video sharing app for people to upload photos or videos and share them with their followers or with a select group of friends
Khan Academy	A website that offers practice exercises, instructional videos, and a personalised learning dashboard that empower learners to study at their own pace in and outside of the classroom
Mal-information	Information that is based on reality, used to inflict harm on a person, social group, organisation or country
Misinformation	Information that is false but not created with the intention of causing harm
MOOC	Massive Open Online Course: an online course aimed at unlimited participation and open access
Prejudice	An unfair and unreasonable opinion or feeling, especially when formed without enough thought or knowledge
Privacy	Broadly speaking, privacy is the right to be left alone, freedom from interference or intrusion. Privacy also encompasses the right to have some control over how your personal information is collected and use.
Search engine optimisation (SEO)	The process associated with increasing the visibility of a website on search engine listings in order to receive more visitors

Terms	Elaborations
Security	The state of being free from danger or threat. In the context of ICT, security represents the rules you follow, actions you take and processes that happen to ensure you are safe online and offline.
Stereotypes	An over-generalised belief about a particular category of people. It is an expectation that people might have about every person of a particular group.
Synchronous collaboration	A type of collaboration where the exchange of ideas, information and interaction between users occurs in real time
Synchronous conferencing	Two-way audio/video communication in real time where users can connect and interact with each other simultaneously
TAN	A transaction authentication number (TAN) is a one-time code used in the processing of online transactions. It represents an additional layer of security beyond a password to securely log into an account or conduct a transaction.
Traditional media	Different media formats (print, audio, video) focused on delivering information to a wide audience
Videoconferencing	Two-way audio/video communication where users can connect and interact with each other simultaneously
Zoom	A synchronous conferencing platform in the cloud that can be used for video, voice, content sharing, and chat

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The Government of the Republic of the Union of Myanmar

Ministry of Education